

INTERNATIONAL  
EDITION

23rd Edition

# *Williams* OBSTETRICS



## STUDY GUIDE

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SECTION 1  
**OVERVIEW**

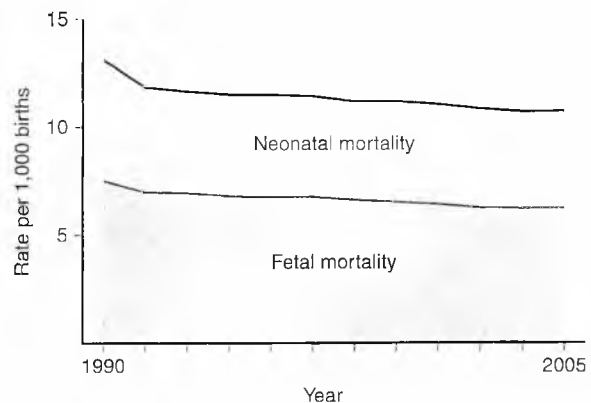


## CHAPTER 1

# Obstetrics in Perspective

- 1-1.** Which of the following is an example of an indirect maternal death?
- Septic shock following abortion
  - Aspiration following eclampsia seizure
  - Hemorrhage following uterine atony
  - Aortic rupture secondary to Marfan syndrome
- 1-2.** The fertility rate is the number of live births per 1,000 females aged?
- 8–39
  - 11–59
  - 15–44
  - 18–49
- 1-3.** A death of a newborn at 5 days of life due to congenital heart disease would be classified as which of the following?
- Fetal death
  - Infant death
  - Late neonatal death
  - Early neonatal death
- 1-4.** Which of the following correctly identifies the trends in fertility and live birth rates in the United States since 2002?
- There has been no change in either rate.
  - Fertility and live birth rates have increased.
  - Fertility and live birth rates have decreased.
  - Fertility rate has decreased but live birth rate is increased.

- 1-5.** What statistic is defined by the red line in this figure?



Reproduced, with permission, from Cunningham FG, Leveno KJ, Bloom SL, et al: Williams Obstetrics, 23rd ed. New York, McGraw-Hill, 2010.

- Stillbirth rate
  - Infant death rate
  - Perinatal mortality rate
  - None of the above
- 1-6.** Most infant deaths occur in which of the following groups?
- Low-birthweight infants
  - Infants of diabetic mothers
  - Infants with congenital infections
  - Infants with congenital anomalies
- 1-7.** Approximately what percentage of pregnant women experience severe maternal morbidity?
- 0.1%
  - 0.5%
  - 2%
  - 5%
- 1-8.** Which of the following events has contributed to the rise in the U. S. cesarean delivery rate?
- Increase in deliveries performed by midwives
  - Decline in vaginal births following cesarean delivery
  - Reduction in reimbursement by insurance companies for cesarean delivery
  - Improved outcomes in infants with congenital abnormalities delivered by cesarean delivery

- 1-9.** On the basis of an American College of Obstetricians and Gynecologists survey, which of the following is the most common citation for obstetric malpractice claims?
- Shoulder dystocia
  - Electronic fetal monitoring
  - Stillbirth or neonatal death
  - Neurologically impaired neonate
- 1-10.** Adolescent pregnancy accounts for what percentage of the total number of unintended pregnancies in the United States?
- 5%
  - 10%
  - 25%
  - 33%
- 1-11.** What percentage of the gross domestic product currently goes toward health care?
- 6%
  - 16%
  - 26%
  - 36%
- 1-12.** The field of obstetrics encompasses all **EXCEPT** which of the following?
- Prenatal care
  - Management of labor
  - Infertility treatments
  - Immediate newborn care
- 1-13.** "Preterm" defines neonates born before what gestational age?
- 34 completed weeks
  - 36 completed weeks
  - 37 completed weeks
  - 38 completed weeks
- 1-14.** What is the leading indication for hospitalization during pregnancy not related to delivery?
- Influenza
  - Diabetes mellitus
  - Chronic hypertension
  - None of the above
- 1-15.** The current number of abortions performed annually in the United States approximates which of the following?
- 100,000
  - 500,000
  - 1,000,000
  - 2,000,000
- 1-16.** Very low-birthweight newborns are defined as those whose birthweight lies below which of the following thresholds?
- 500 g
  - 1,000 g
  - 1,500 g
  - 2,000 g
- 1-17.** Which of the following is defined as the number of maternal deaths that result from the reproductive process per 100,000 live births?
- Maternal mortality rate
  - Maternal mortality ratio
  - Direct maternal death rate
  - Pregnancy-related death rate
- 1-18.** Including spontaneous abortions, induced abortions, and live births, what was the approximate number of pregnancies in 2006?
- 4 million
  - 5 million
  - 6 million
  - 7 million
- 1-19.** Which racial/ethnic group has the highest fetal death rate in the United States?
- White
  - Black
  - Asian
  - Hispanic
- 1-20.** Fetal death in the United States is defined as which of the following?
- Death following conception
  - Death after 20 weeks' gestation
  - Death with a birthweight greater than 500 g
  - All of the above
- 1-21.** Registration of live births is currently assigned to which national agency?
- Bureau of the Census
  - National Institutes of Health
  - Department of Health and Human Services
  - National Center for Health Statistics
- 1-22.** Which of the following is **NOT** among the top three causes of pregnancy-related death?
- Embolism
  - Hemorrhage
  - Cardiomyopathy
  - Hypertensive disorders

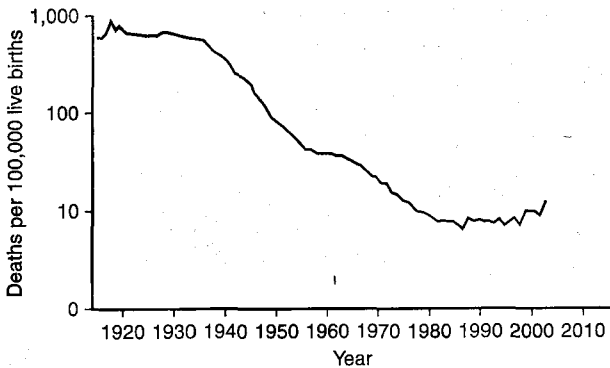
**1-23.** What is the average number of live births per woman in the United States?

- a. 1
- b. 2
- c. 3
- d. 4

**1-24.** What was the cesarean delivery rate in the United States in 2006?

- a. 21%
- b. 28%
- c. 31%
- d. 36%

**1-25.** Which of the following contributed to the trend on this graph?



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- a. Contraception
- b. Antibiotic treatment
- c. Availability of blood products
- d. All of the above

**1-26.** Goals of Healthy People 2010 and 2020 include all EXCEPT which of the following?

- a. Reduce maternal mortality rates
- b. Reduce nonmaternal death rates
- c. Reduce the rate of preterm delivery
- d. Decrease the disparity of outcomes between whites and ethnic/racial minorities

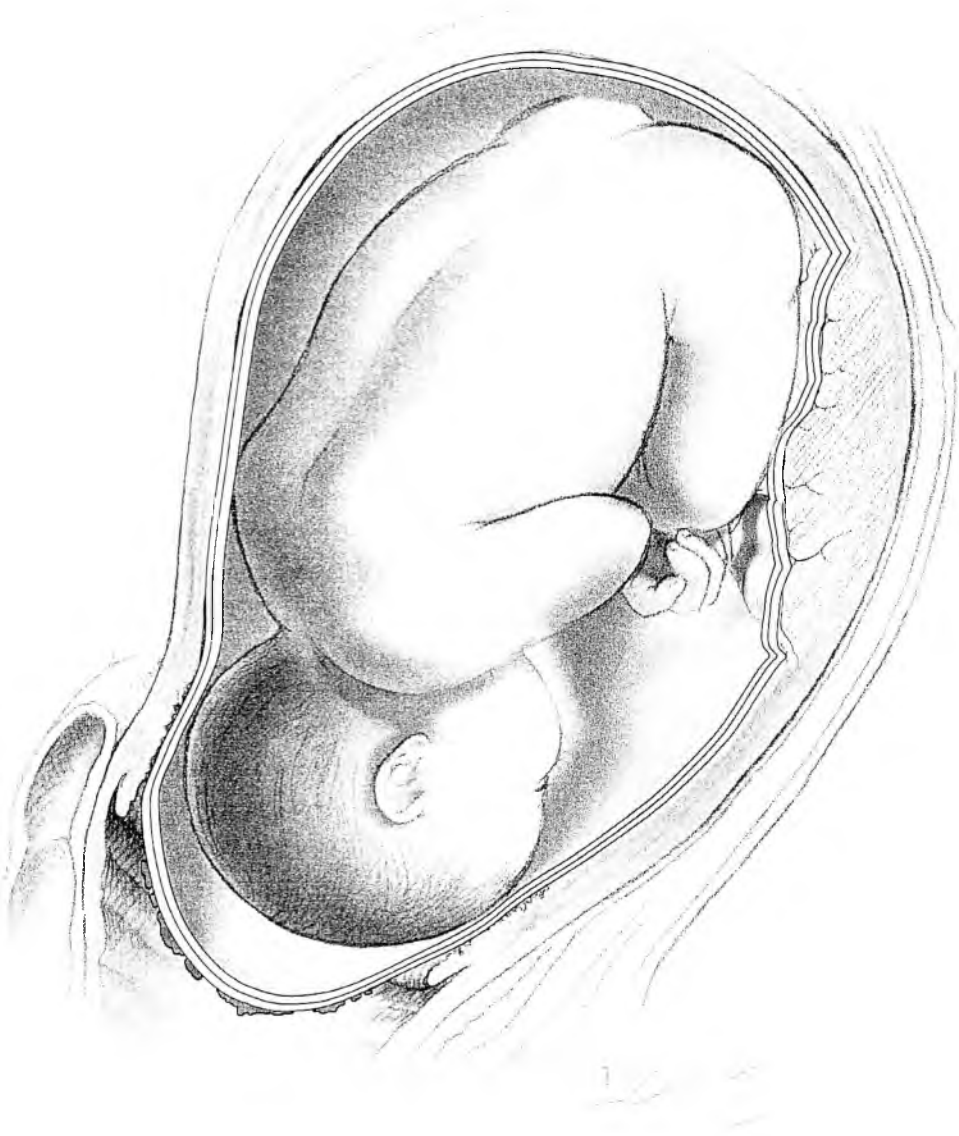
**CHAPTER 1 ANSWER KEY**

| Question number | Letter answer | Page cited | Header cited                  |
|-----------------|---------------|------------|-------------------------------|
| <b>1-1</b>      | <b>d</b>      | p. 3       | Definitions                   |
| <b>1-2</b>      | <b>c</b>      | p. 3       | Definitions                   |
| <b>1-3</b>      | <b>d</b>      | p. 3       | Definitions                   |
| <b>1-4</b>      | <b>c</b>      | p. 4       | Pregnancy Rates               |
| <b>1-5</b>      | <b>c</b>      | p. 5       | Figure 1-1                    |
| <b>1-6</b>      | <b>a</b>      | p. 5       | Infant Deaths                 |
| <b>1-7</b>      | <b>b</b>      | p. 6       | Severe Maternal Morbidity     |
| <b>1-8</b>      | <b>b</b>      | p. 7       | Rising Cesarean Delivery Rate |
| <b>1-9</b>      | <b>d</b>      | p. 9       | Table 1-5                     |
| <b>1-10</b>     | <b>c</b>      | p. 10      | Figure 1-5                    |
| <b>1-11</b>     | <b>b</b>      | p. 11      | Healthcare Reform             |
| <b>1-12</b>     | <b>c</b>      | p. 2       | Introduction                  |
| <b>1-13</b>     | <b>c</b>      | p. 3       | Definitions                   |

| Question number | Letter answer | Page cited | Header cited                  |
|-----------------|---------------|------------|-------------------------------|
| <b>1-14</b>     | <b>d</b>      | p. 4       | Pregnancy-Related Care        |
| <b>1-15</b>     | <b>c</b>      | p. 4       | Table 1-1                     |
| <b>1-16</b>     | <b>c</b>      | p. 3       | Definitions                   |
| <b>1-17</b>     | <b>b</b>      | p. 3       | Definitions                   |
| <b>1-18</b>     | <b>b</b>      | p. 4       | Pregnancy Rates               |
| <b>1-19</b>     | <b>b</b>      | p. 5       | Figure 1-2                    |
| <b>1-20</b>     | <b>d</b>      | p. 3       | Definitions                   |
| <b>1-21</b>     | <b>d</b>      | p. 2       | Vital Statistics              |
| <b>1-22</b>     | <b>c</b>      | p. 6       | Table 1-2                     |
| <b>1-23</b>     | <b>b</b>      | p. 4       | Pregnancy Rates               |
| <b>1-24</b>     | <b>c</b>      | p. 7       | Rising Cesarean Delivery Rate |
| <b>1-25</b>     | <b>d</b>      | p. 6       | Figure 1-3                    |
| <b>1-26</b>     | <b>b</b>      | p. 4       | Healthy People 2010 and 2020  |

SECTION 2

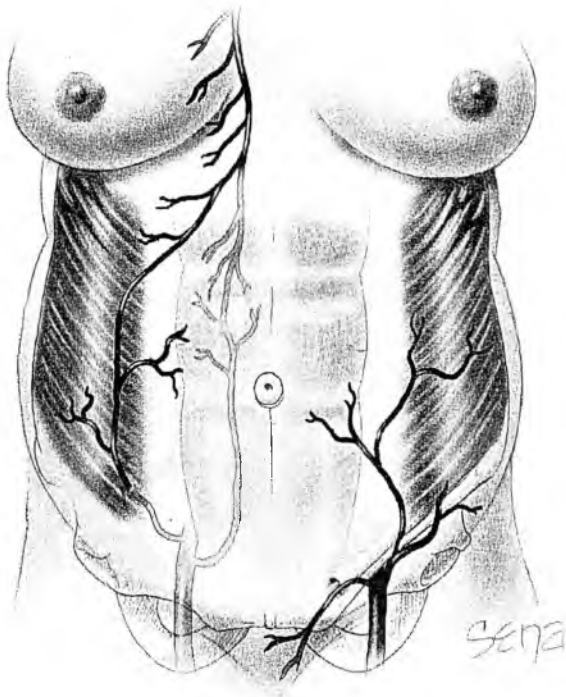
# ANATOMY AND PHYSIOLOGY



## CHAPTER 2

# Maternal Anatomy

- 2-1.** Which of the following in general is true of vertical abdominal incisions?
- Heal better than Pfannenstiel incisions
  - Follow vertically oriented dermal fibers (Langer lines)
  - Yield inferior cosmetic results compared with transverse incisions
  - Sustain decreased lateral tension
- 2-2.** The femoral artery gives rise to all EXCEPT which of the following vessels?



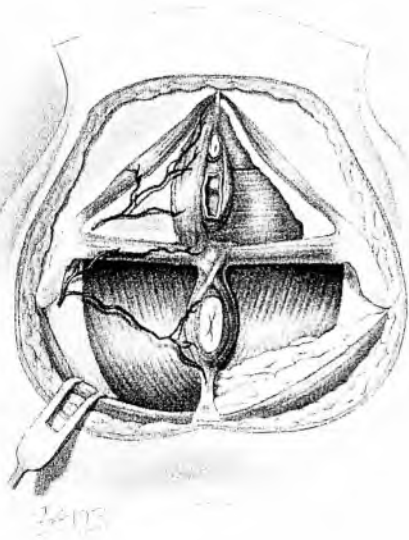
- 2-3.** Which dermatome approximates the level of the umbilicus?
- T7–T11
  - T12
  - T10
  - L1
- 2-4.** Which vulvar structure is homologous to the male scrotum?
- Labia minora
  - Urethra
  - Vestibule
  - Labia majora
- 2-5.** With regard to the vestibule, which of the following statements is correct?
- It is derived from embryonic urogenital membranes.
  - The posterior portion between the fourchette and the vaginal opening is called the fossa annulares.
  - It is perforated by four openings.
  - The fossa navicularis is usually observed only in nulliparous women.
- 2-6.** The internal pudendal artery supplies which of the following?
- Proximal vagina
  - Posterior vaginal wall
  - Distal vaginal wall
  - Bladder trigone

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- Superficial circumflex iliac artery
- External pudendal artery
- Inferior epigastric artery
- Superficial epigastric artery



- 2-7. The vagina and its investing musculature are supplied by all **EXCEPT** which of the following arteries?



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- a. Inferior rectal artery
  - b. Perineal artery
  - c. Pudendal artery
  - d. Posterior labial artery
- 2-8. Which of the following is true concerning the anal sphincters?
- a. The external anal sphincter receives blood supply from the superior rectal artery.
  - b. The internal anal sphincter contributes the bulk of anal canal resting pressure.
  - c. The external anal sphincter measures 3 to 4 cm in length.
  - d. The external sphincter remains in a state of constant relaxation.
- 2-9. The perineal body is formed partly by which of the following muscles?
- a. Ischiocavernosus muscle
  - b. Gluteus maximus muscle
  - c. Bulbocavernosus muscle
  - d. Levator ani muscle
- 2-10. Which of the following is the potential space between the anterior surface of the uterus and the posterior wall of the bladder?
- a. Pouch of Douglas
  - b. Rectovaginal septum
  - c. Morison pouch
  - d. Vesicouterine space

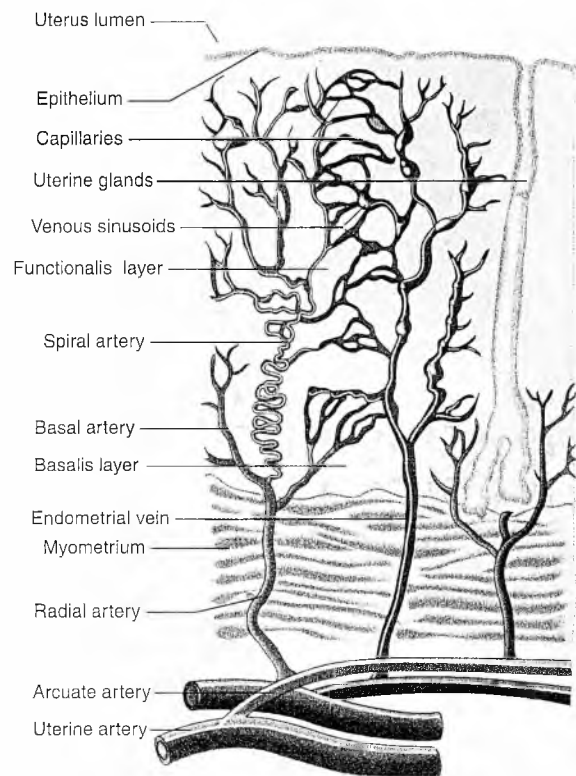
- 2-11. Which of the following is true regarding the uterus?

- a. It measures 8 to 9 cm in length in nulliparous women.
- b. It weighs 50 to 70 g in the parous woman.
- c. In the nullipara, the fundus and the cervix are of equal length.
- d. The cervix is composed mainly of muscle.

- 2-12. The cervix contains little of which of the following components?

- a. Smooth muscle
- b. Collagen
- c. Proteoglycans
- d. Elastin

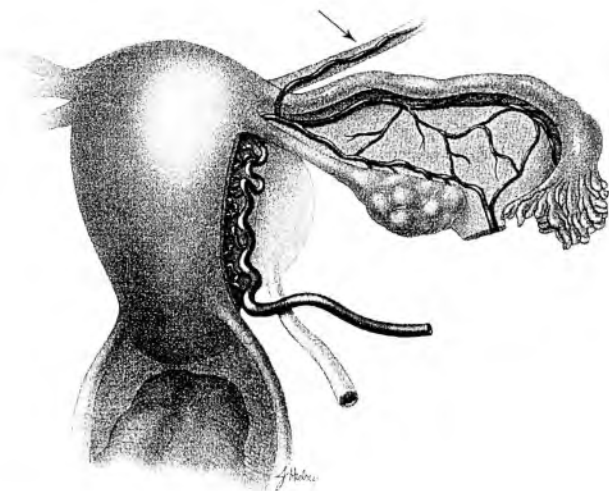
- 2-13. Concerning the endometrium, which of the following is true?



Reproduced, with permission, from Hoffman BL: Abnormal uterine bleeding. In: Schorge JO, Schaffer JI, Halvorson LM, et al., eds. Williams Gynecology. New York, McGraw-Hill, 2008, Figure 8-2.

- a. The basal artery comes directly from the arcuate artery.
- b. Spiral arteries extend directly from radial arteries.
- c. The functionalis layer contains spiral arteries and radial arteries.
- d. The spiral arteries extend directly from the arcuate artery.

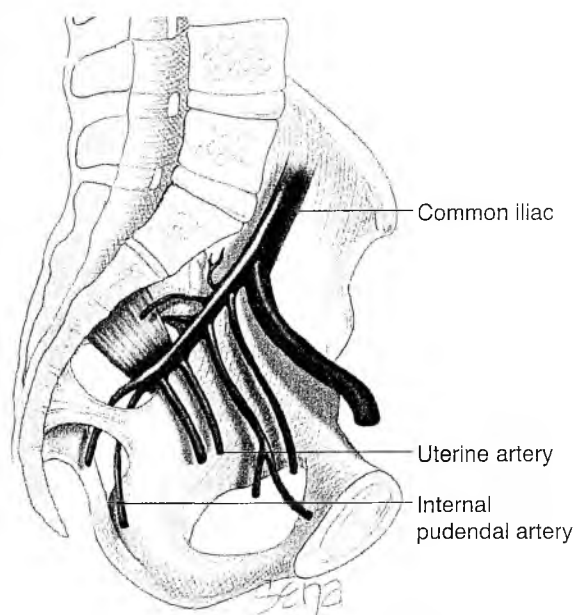
- 2-14.** During postpartum tubal sterilization, which of the following correct anatomical information may assist you?
- The fallopian tube lies anterior to the round ligament.
  - The fallopian tube lies posterior to the uteroovarian ligament.
  - The round ligament lies anterior to the fallopian tube.
  - The uteroovarian ligament lies anterior to the round ligament.
- 2-15.** The artery that runs through this structure (arrow) directly arises from which of the following?



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- Sampson artery
  - Internal iliac artery
  - Uterine artery
  - Obturator artery
- 2-16.** The ovarian artery is a direct branch of which of the following vessels?
- Internal iliac artery
  - Aorta
  - Uterine artery
  - External iliac artery

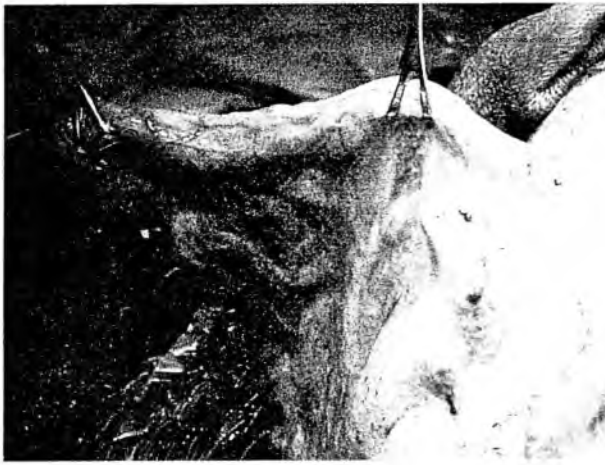
- 2-17.** The right ovarian vein empties into which of the following veins?
- Vena cava
  - Renal vein
  - Internal iliac vein
  - External iliac vein
- 2-18.** Ovarian vessels are found in which of the following ligaments?
- Broad
  - Round
  - Uterosacral
  - Infundibulopelvic
- 2-19.** The common iliac artery arises directly from which of the following?



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- Aorta
  - External iliac artery
  - Internal iliac artery
  - None of the above
- 2-20.** The uterine artery is a main branch of which of the following vessels?
- External iliac artery
  - Internal iliac artery
  - Common iliac artery
  - Iliolumbar artery

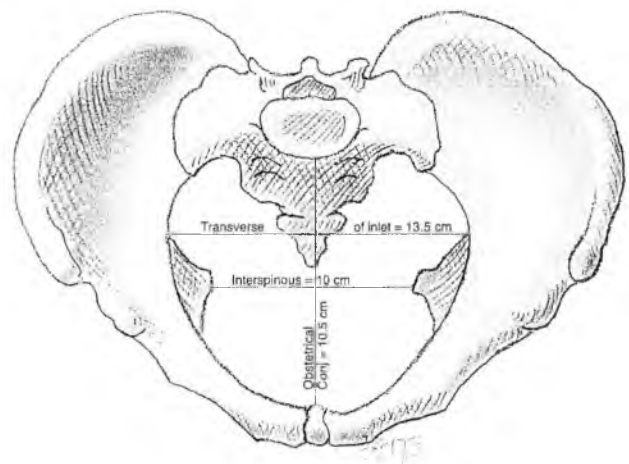
- 2-21. The internal pudendal artery arises from which of the following vessels?
- External iliac artery
  - Internal iliac artery
  - Vaginal artery
  - Inferior epigastric artery
- 2-22. From proximal (uterus) to distal (fimbria), the correct progression of fallopian tube anatomy is which of the following?



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- Isthmus, infundibulum, ampulla
  - Isthmus, ampulla, infundibulum
  - Infundibulum, ampulla, isthmus
  - Ampulla, infundibulum, isthmus
- 2-23. Which of the following bone(s) forms the pelvis?
- Innominate
  - Sacrum
  - Coccyx
  - All of the above
- 2-24. Which of the following is true regarding relaxation of the pelvic joints at term in pregnancy?
- It allows for an increase in the transverse diameter of the midpelvis.
  - It results in marked mobility of the pelvis at term because of a downward gliding movement of the sacroiliac (SI) joint.
  - Displacement of the SI joint increases outlet diameters by 1.5 to 2.0 cm in the dorsal lithotomy position.
  - It is permanent and not accentuated in subsequent pregnancies.

- 2-25. The shortest anteroposterior diameter of the pelvic inlet is which of the following?
- True conjugate
  - Obstetrical conjugate
  - Diagonal conjugate
  - None of the above
- 2-26. The clinical evaluation of the pelvic inlet requires direct measurement of which diameter?
- True conjugate
  - Obstetrical conjugate
  - Diagonal conjugate
  - Pelvic inlet transverse diameter
- 2-27. Engagement occurs when the biparietal diameter of the fetal head descends below the level of which of the following?
- Midpelvis
  - Pelvic inlet
  - Pelvic floor
  - Ischial tuberosities
- 2-28. In this figure, which of the following is demonstrated?



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- Important pelvic outlet diameters
- Ischial tuberosities
- Midpelvis ischial spines
- An inadequate obstetrical conjugate

- 2-29.** What is the narrowest pelvic dimension that must be navigated by the fetal head?
- Inferior strait
  - Obstetrical conjugate
  - Interspinous diameter
  - Transverse diameter of the pelvic inlet
- 2-30.** Which of the following is true of the midpelvis?
- It is measured at the level of the ischial tuberosities.
  - It usually measures no more than 9 cm.
  - It is measured at the level of the ischial spines.
  - It usually is the largest pelvic diameter.
- 2-31.** Which of the following is the most common pelvic shape?
- Gynecoid pelvis
  - Anthropoid pelvis with gynecoid tendency
  - Android pelvis
  - Gynecoid pelvis with android tendency
- 2-32.** The pubococcygeus muscle is now preferably called which of the following?
- Puborectalis muscle
  - Iliococcygeus muscle
  - Puboperinealis muscle
  - Pubovisceral muscle

**CHAPTER 2 ANSWER KEY**

| Question number | Letter answer | Page cited | Header cited                  |
|-----------------|---------------|------------|-------------------------------|
| 2-1             | c             | p. 14      | Skin                          |
| 2-2             | c             | p. 14      | Blood Supply                  |
| 2-3             | c             | p. 15      | Innervation                   |
| 2-4             | d             | p. 15      | Labia Majora                  |
| 2-5             | a             | p. 16      | Vestibule                     |
| 2-6             | c             | p. 18      | Vascular and Lymphatic Supply |
| 2-7             | a             | p. 20      | Figure 2-5                    |
| 2-8             | b             | p. 20      | Anal Sphincter                |
| 2-9             | c             | p. 21      | Perineal Body                 |
| 2-10            | d             | p. 21      | Uterus                        |
| 2-11            | c             | p. 21      | Size and Shape                |
| 2-12            | a             | p. 23      | Cervix                        |
| 2-13            | b             | p. 24      | Endometrium                   |
| 2-14            | c             | p. 25      | Ligaments                     |
| 2-15            | c             | p. 26      | Figure 2-15                   |
| 2-16            | b             | p. 26      | Blood Vessel                  |

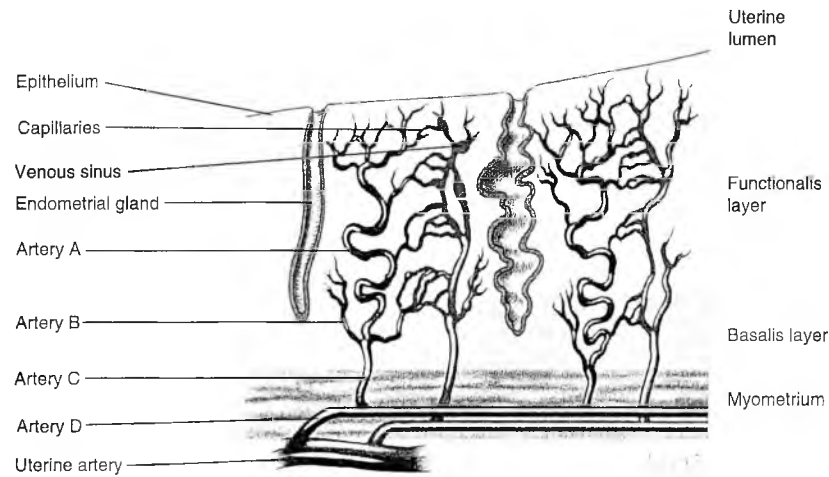
| Question number | Letter answer | Page cited | Header cited     |
|-----------------|---------------|------------|------------------|
| 2-17            | a             | p. 26      | Blood Vessel     |
| 2-18            | d             | p. 26      | Blood Vessel     |
| 2-19            | a             | p. 27      | Figure 2-16      |
| 2-20            | b             | p. 27      | Figure 2-16      |
| 2-21            | b             | p. 27      | Figure 2-16      |
| 2-22            | b             | p. 28      | Fallopian Tubes  |
| 2-23            | d             | p. 29      | Pelvic Bones     |
| 2-24            | c             | p. 29      | Pelvic Joints    |
| 2-25            | b             | p. 31      | Pelvic Inlet     |
| 2-26            | c             | p. 31      | Pelvic Inlet     |
| 2-27            | b             | p. 31      | Pelvic Inlet     |
| 2-28            | c             | p. 31      | Pelvic Inlet     |
| 2-29            | c             | p. 31      | Midpelvis        |
| 2-30            | c             | p. 32      | Midpelvis        |
| 2-31            | a             | p. 32      | Pelvic Shapes    |
| 2-32            | d             | p. 32      | Muscular Support |

**CHAPTER 3****Implantation, Embryogenesis, and Placental Development**

- 3-1.** The normal length of the average menstrual cycle ranges between which of the following values?
- 14–28 days
  - 25–32 days
  - 28–35 days
  - 30–40 days
- 3-2.** Of the 2 million oocytes in the human ovary present at birth, approximately how many are present at the onset of puberty?
- 200,000
  - 300,000
  - 400,000
  - 500,000
- 3-3.** Which hormone is required for the late-stage development of antral follicles?
- Luteinizing hormone (LH)
  - Follicle-stimulating hormone (FSH)
  - Estradiol
  - Androstenedione
- 3-4.** During the follicular phase of the menstrual cycle, estrogen is primarily produced by which cells of the dominant follicle?
- Theca
  - Decidual
  - Granulosa
  - Endometrial
- 3-5.** The process through which the corpus luteum develops from the remains of the Graafian follicle is called which of the following?
- Luteinization
  - Thecalization
  - Decidualization
  - Graafian transformation
- 3-6.** What is the peak ovarian progesterone production during midluteal phase?
- 10–20 mg/d
  - 25–50 mg/d
  - 60–80 mg/d
  - 75–100 mg/d
- 3-7.** Which of the following is the most biologically potent naturally occurring estrogen?
- Estriol
  - Estrone
  - Estetrol
  - 17 $\beta$ -estradiol
- 3-8.** Which of the following is the endometrial layer that is shed with every menstrual cycle?
- Basalis layer
  - Decidual layer
  - Luteinized layer
  - Functional layer
- 3-9.** Which of the following is the first histological sign of ovulation?
- Cessation of glandular cell mitosis
  - Vacuoles at the apical portion of the secretory nonciliated cells
  - Secretion of glycoprotein and mucopolysaccharide by secretory nonciliated cells
  - Subnuclear vacuoles and pseudostratification in the basal portion of the glandular epithelium

3-10. In the following figure, the spiral arteries are identified by which letter?

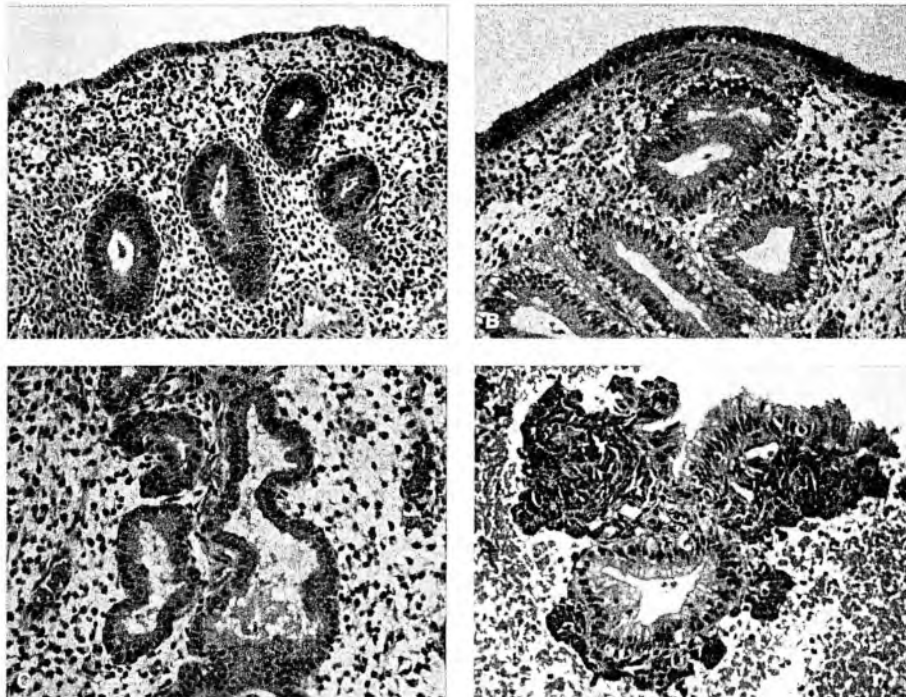
- a. A
- b. B
- c. C
- d. D



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3-11. Among the following histological slides, which one is consistent with the menstrual phase?

- a. A
- b. B
- c. C
- d. D



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**3-12.** Which prostaglandin plays a role in vasoconstriction of the spiral arteries, leading to menstruation?

- a.  $\text{PGE}_1$
- b.  $\text{PGE}_2$
- c.  $\text{PGD}_2$
- d.  $\text{PGF}_{2\alpha}$

**3-13.** In sequence from letters A to C, please identify the three types of deciduas in the figure below:

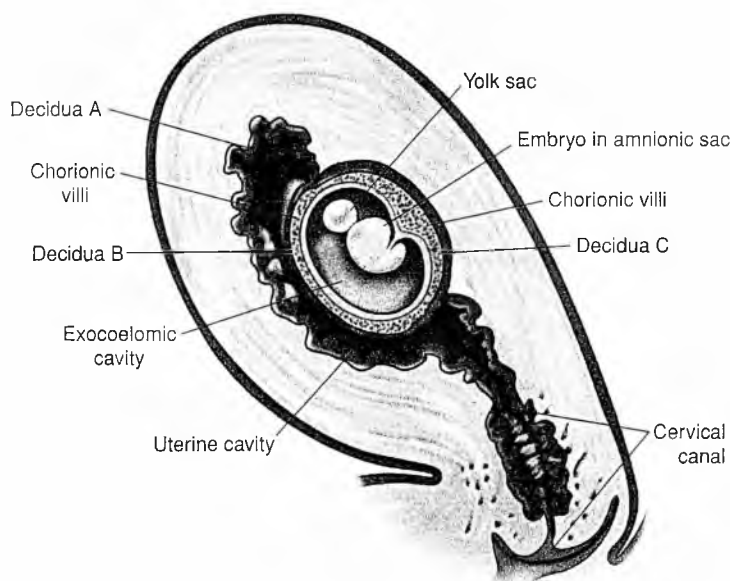
- a. Basalis, capsularis, parietalis
- b. Capsularis, basalis, parietalis
- c. Parietalis, basalis, capsularis
- d. Parietalis, capsularis, basalis

**3-15.** The placenta does not perform which of the following functions for the fetus?

- a. Renal
- b. Hepatic
- c. Adrenal
- d. Pulmonary

**3-16.** At 5 days postfertilization, the blastocyst is released from which surrounding structure?

- a. Morula
- b. Chorion laeve
- c. Zona pellucida
- d. Trophectoderm



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**3-14.** What is the Nitabuch layer?

- a. A layer of the decidua composed of large, distended glands
- b. An area of the decidua with large, closely packed epithelioid, polygonal cells
- c. A zone of fibrinoid degeneration in which the invading trophoblasts meet the decidua
- d. An area of superficial fibrin deposition at the bottom of the intervillous space and surrounding the anchoring villi

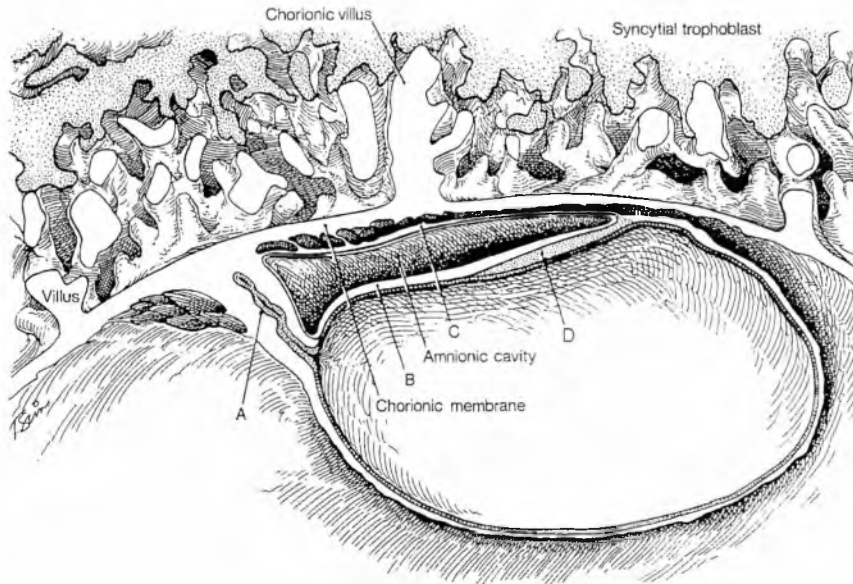
**3-17.** Which of the following gives rise to the chorionic structures that transport oxygen and nutrients between fetus and mother?

- a. Villous trophoblast
- b. Interstitial trophoblast
- c. Extravillous trophoblast
- d. Endovascular trophoblast



- 3-18. Which of the labeled structures in the following figure will eventually become the umbilical cord?
- A
  - B
  - C
  - D

- 3-22. Remodeling of maternal spiral arteries by invading trophoblasts is completed by which week(s) of pregnancy?
- 8
  - 12
  - 12–16
  - 16–18



Reproduced, with permission, from Streeter GL. A human embryo [Mateer] of the presomite period. *Contrib Embryol* 1920; 9:389.

- 3-19. Which of the following statements is accurate regarding the chorion frondosum?
- Is the same as the chorion laeve
  - Is the maternal component of the placenta
  - Is the avascular area that abuts the decidua parietalis
  - Is the area of villi in contact with the decidua basalis
- 3-20. Maternal regulation of trophoblast invasion and vascular growth is mainly overseen by which of the following?
- Decidual natural killer (dNK) cells
  - CD4<sup>+</sup> T cells
  - Progesterone
  - Cellular adhesion molecules
- 3-21. All EXCEPT which of the following is true regarding fetal fibronectin?
- Is a matrix metalloproteinase
  - Is also known as “trophoblast glue”
  - Is a prognostic indicator of preterm labor
  - Plays a role in trophoblast invasion of the endometrium

- 3-23. End diastolic blood flow can be identified in the fetal umbilical artery by the end of which week of pregnancy?
- 10
  - 12
  - 14
  - 16
- 3-24. Regarding the orientation of spiral blood vessels in relationship to the uterus, which of the following is true?
- Both arteries and veins are parallel to the uterine wall
  - Both arteries and veins are perpendicular to the uterine wall
  - Arteries are perpendicular, and veins are parallel to the uterine wall
  - Veins are perpendicular, and arteries are parallel to the uterine wall

**3-25.** The phenomenon that describes how fetal cells can become engrafted in the mother during pregnancy and then be identified decades later is called which of the following?

- a. Microchimerism
- b. Histocompatibility
- c. Hemochorial invasion
- d. Immunological neutrality

**3-26.** The amnion is composed of all **EXCEPT** which of the following?

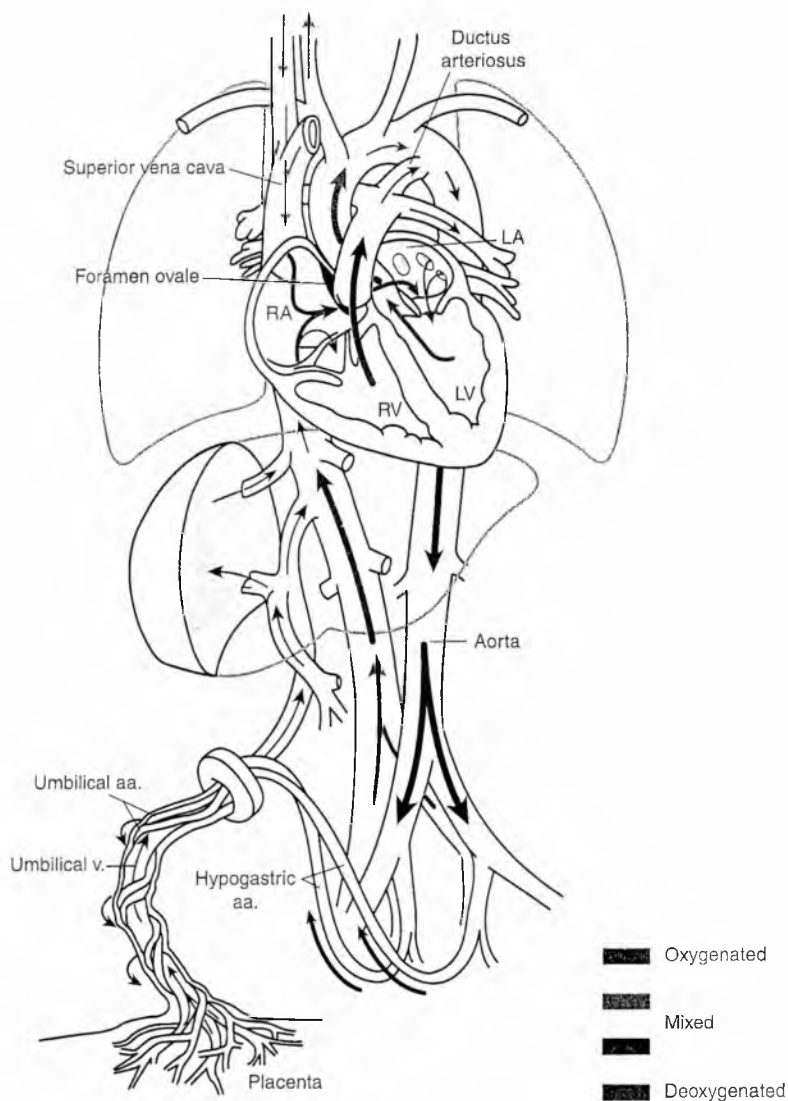
- a. Lymphatics
- b. Interstitial collagen
- c. Basement membrane
- d. Acellular zona spongiosa

**3-27.** Which of the following is accurate regarding Meckel diverticulum?

- a. Is the allantoic duct remnant
- b. Is a failure of the right umbilical vein to involute
- c. Is an extraabdominal remnant of the umbilical vesicle
- d. Is a failure of the intraabdominal portion of the umbilical vesicle to atrophy

**3-28.** As shown in this figure, blood coming from the placenta to the fetus travels from the umbilical vein into which of the following?

- a. The portal vein
- b. The hepatic vein
- c. The ductus venosus
- d. The inferior vena cava



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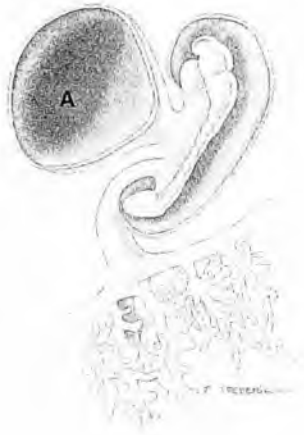
- 3-29.** The amino acid sequence of the  $\alpha$ -subunit of human chorionic gonadotropin (hCG) is identical in all **EXCEPT** which of the following?
- LH
  - Corticotropin-releasing hormone (CRH)
  - FSH
  - Thyroid-stimulating hormone (TSH)
- 3-30.** Abnormally low levels of hCG may be found in which of the following?
- Down syndrome
  - Ectopic pregnancy
  - Erythroblastosis fetalis
  - Gestational trophoblastic disease
- 3-31.** Known biological actions of hCG include all **EXCEPT** which of the following?
- Maternal thyroid stimulation
  - Inhibition of relaxin secretion
  - Sexual differentiation of the male fetus
  - Rescue and maintenance of the corpus luteum
- 3-32.** Which of the following has the greatest production rate of any known human hormone?
- Progesterone
  - Human placental lactogen
  - Chorionic adrenocorticotropin
  - hCG
- 3-33.** Among placental peptide hormones, which of the following has shown a correlation with birthweight?
- Leptin
  - Activin
  - Inhibin
  - Neuropeptide Y
- 3-34.** Which of the following is true of bilateral oophorectomy at 9 weeks' gestation?
- Will cause miscarriage
  - Will cause a significant drop in progesterone levels
  - Will not alter the excretion of urinary pregnanediol
  - None of the above
- 3-35.** What is the precursor of placental progesterone?
- Fetal high-density lipoprotein (HDL) cholesterol
  - Fetal low-density lipoprotein (LDL) cholesterol
  - Maternal HDL cholesterol
  - Maternal LDL cholesterol
- 3-36.** Besides being an X-linked disorder that affects male fetuses, true statements regarding ichthyosis include which of the following?
- It is seen with fetal adrenal hypoplasia.
  - It is seen with fetal adrenal hyperplasia.
  - It is associated with fetal placental sulfatase deficiency.
  - It is associated with fetal placental aromatase deficiency.
- 3-37.** Which of the following conditions is associated with elevated estrogen levels in pregnancy?
- Down syndrome
  - Fetal erythroblastosis
  - Glucocorticoid therapy
  - Fetal placental aromatase deficiency

## CHAPTER 3 ANSWER KEY

| Question number | Letter answer | Page cited | Header cited                                                           | Question number | Letter answer | Page cited | Header cited                                                    |
|-----------------|---------------|------------|------------------------------------------------------------------------|-----------------|---------------|------------|-----------------------------------------------------------------|
| 3-1             | b             | p. 37      | The Ovarian Cycle                                                      | 3-19            | d             | p. 52      | Development of Chorion and Decidua                              |
| 3-2             | c             | p. 37      | Follicular or Preovulatory Ovarian Phase                               | 3-20            | a             | p. 53      | Maternal Regulation of Trophoblast Invasion and Vascular Growth |
| 3-3             | b             | p. 38      | Follicular or Preovulatory Ovarian Phase                               | 3-21            | a             | p. 53      | Trophoblast Invasion of the Endometrium                         |
| 3-4             | c             | p. 39      | Follicular or Preovulatory Ovarian Phase                               | 3-22            | c             | p. 54      | Invasion of Spiral Arteries                                     |
| 3-5             | a             | p. 40      | Luteal or Postovulatory Ovarian Phase                                  | 3-23            | a             | p. 56      | Fetal Circulation                                               |
| 3-6             | b             | p. 40      | Luteal or Postovulatory Ovarian Phase                                  | 3-24            | c             | p. 57      | Maternal Circulation                                            |
| 3-7             | d             | p. 41      | Estrogen and Progesterone Action                                       | 3-25            | a             | p. 58      | Breaks in the Placental "Barrier"                               |
| 3-8             | d             | p. 41      | The Endometrial Cycle/Proliferative and Preovulatory Endometrial Phase | 3-26            | a             | p. 59      | The Amnion/Structure                                            |
| 3-9             | d             | p. 42      | Secretory or Postovulatory Endometrial Phase                           | 3-27            | d             | p. 62      | Cord Development                                                |
| 3-10            | a             | p. 42      | Figure 3-5                                                             | 3-28            | c             | p. 62, 90  | Cord Structure and Function/Figure 4-12                         |
| 3-11            | d             | p. 38      | Dating of Endometrium, Figure 3-2                                      | 3-29            | b             | p. 63      | hCG/Chemical Characteristics                                    |
| 3-12            | d             | p. 44      | Prostaglandins and Menstruation                                        | 3-30            | b             | p. 64      | Significance of abnormally high or low hCG levels               |
| 3-13            | d             | p. 45      | Decidual Structure/Figure 3-8                                          | 3-31            | b             | p. 64      | Known Biological Functions of hCG                               |
| 3-14            | c             | p. 46      | Decidual Histology                                                     | 3-32            | b             | p. 65      | Human Placental Lactogen/Chemical Characteristics               |
| 3-15            | c             | p. 47      | Implantation, Placental Formation and Membrane Development             | 3-33            | a             | p. 67      | Leptin                                                          |
| 3-16            | c             | p. 47      | Ovum Fertilization and Zygote Cleavage                                 | 3-34            | c             | p. 67      | Placental Progesterone Production                               |
| 3-17            | a             | p. 49      | Trophoblast Differentiation                                            | 3-35            | d             | p. 68      | Progesterone Production Rates                                   |
| 3-18            | a             | p. 51      | Figure 3-15, Early Trophoblast Invasion                                | 3-36            | c             | p. 71      | Fetal Placental Sulfatase Deficiency                            |
|                 |               |            |                                                                        | 3-37            | b             | p. 71      | Maternal Conditions That Affect Placental Estrogen Production   |

## CHAPTER 4

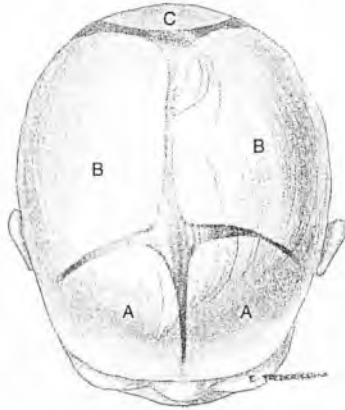
# Fetal Growth and Development

- 4-1. A patient reports that the first day of her last menstrual period was April 10. On the basis of Naegele rule, her due date is which of the following?
- January 17
  - July 17
  - January 3
  - July 3
- 4-2. The length of the embryonic period is which of the following?
- 6 weeks
  - 8 weeks
  - 12 weeks
  - 14 weeks
- 4-3. The image below is of a human embryo at 22 days' gestation. The area marked "A" represents which of the following?
- 
- 4-4. At 28 weeks' gestation, what is the chance of survival without physical or neurological impairment?
- 50%
  - 65%
  - 90%
  - 100%
- 4-5. Which of the following fetal head diameter measurements is the largest?
- Bitemporal
  - Biparietal
  - Occipitofrontal
  - Occipitomenal
- 4-6. The shifting or sliding of the fetal head bones to permit accommodation of the fetal head to the maternal pelvis is referred to as which of the following?
- Caput
  - Yielding
  - Molding
  - Flexion
- 4-7. Uteroplacental blood flow at term measures approximately which of the following?
- 50–100 mL/min
  - 100–300 mL/min
  - 700–900 mL/min
  - 1,200–1,400 mL/min

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- Amnion
- Yolk sac
- Chorion
- Bladder

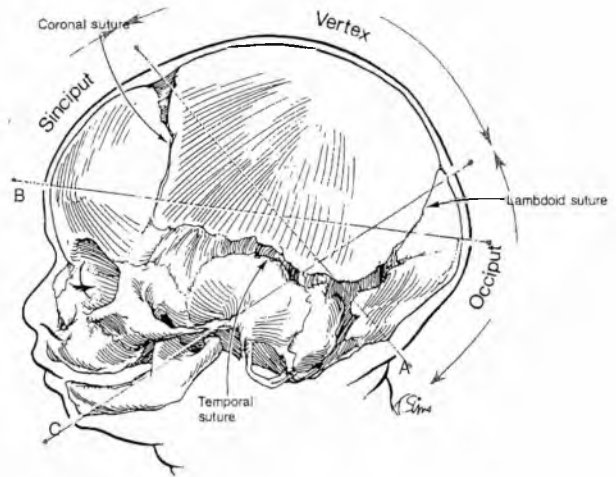
The following image applies to questions 4–8 and 4–9.



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- 4–8. Which of the following sequences correctly names the labeled fetal head bones?
- A is the frontal bone, B is the parietal bone, and C is the occipital bone.
  - A is the parietal bone, B is the occipital bone, and C is the frontal bone.
  - A is the temporal bone, B is the frontal bone, and C is the occipital bone.
  - A is the frontal bone, B is the temporal bone, and C is the parietal bone.
- 4–9. The suture that is bordered by the bones labeled A and B is which of the following?
- Frontal suture
  - Coronal suture
  - Sagittal suture
  - Lambdoid suture

- 4–10. Which of the following sequences correctly names the labeled fetal head diameters?



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- A is suboccipitobregmatic, B is occipitofrontal, and C is occipitomenal.
  - A is occipitofrontal, B is suboccipitobregmatic, and C is occipitomenal.
  - A is occipitomenal, B is occipitofrontal, and C is suboccipitobregmatic.
  - A is occipitofrontal, B is occipitomenal, and C is suboccipitobregmatic.
- 4–11. Fetal blood oxygen stores are sufficient to sustain the fetus for what time length?
- 30 seconds
  - 60–120 seconds
  - 3–4 minutes
  - 5–7 minutes
- 4–12. Carbon dioxide ( $\text{CO}_2$ ) transfer from the fetus to the mother is favored due to which of the following mechanisms?
- Oxygen traverses the chorionic villus more rapidly than carbon dioxide.
  - Mild maternal hypoventilation enhances rapid  $\text{CO}_2$  transfer.
  - Partial pressure of  $\text{CO}_2$  in the umbilical arteries is less than in maternal intervillous blood.
  - Fetal blood has less affinity for  $\text{CO}_2$  than does maternal blood.

- 4-13.** Oxygen, carbon dioxide, and water are transferred across the placenta via which mechanism?
- Facilitated diffusion
  - Simple diffusion
  - Active transport
  - Carrier-mediated diffusion
- 4-14.** Which of the following hormones blocks maternal peripheral uptake and use of glucose while promoting mobilization and use of free fatty acids by maternal tissues?
- Human chorionic gonadotropin (hCG)
  - Human placental lactogen (HPL)
  - Relaxin
  - Leptin
- 4-15.** Which of the following statements about placental transport is true?
- The placenta concentrates a large number of amino acids.
  - Large proteins are freely transferred across the placenta.
  - Copper levels are higher in fetal plasma than maternal plasma because of carrier-mediated transfer.
  - Vitamin C crosses the placenta by simple diffusion.
- 4-16.** Which of the following immunoglobulins crosses the placenta in large amounts?
- Immunoglobulin A
  - Immunoglobulin E
  - Immunoglobulin M
  - Immunoglobulin G
- 4-17.** Amnionic fluid is composed largely of fetal urine starting at what gestational age?
- 10 weeks
  - 20 weeks
  - 30 weeks
  - 40 weeks
- 4-18.** Fetal kidneys start producing urine at what gestational age?
- 20 weeks
  - 16 weeks
  - 12 weeks
  - 8 weeks
- 4-19.** Which of the following statements about fetal circulation is correct?
- Ventricles of the fetal heart work in series.
  - The oxygen content of the blood entering the left ventricle is less than that entering the right ventricle.
  - The right atrium directs entering blood to the left atrium or right ventricle depending on the oxygen content of the blood.
  - Most of the right ventricular output enters the pulmonary vasculature.
- 4-20.** What percentage of right ventricular output goes to the lungs?
- 15%
  - 30%
  - 45%
  - 60%
- 4-21.** When do the distal hypogastric arteries undergo atrophy and obliteration postnatally?
- Day of life 1
  - 3–4 days after birth
  - 1 week after birth
  - 6 months of age
- 4-22.** The umbilical arteries become which of the following?
- Ligamentum teres
  - Ligamentum venosum
  - Uterine ligaments
  - Umbilical ligaments
- 4-23.** Hemoglobin content of fetal blood at term is which of the following?
- 6 g/dL
  - 12 g/dL
  - 18 g/dL
  - 24 g/dL
- 4-24.** Fetal hemopoiesis is first seen in which of the following?
- Bone marrow
  - Liver
  - Yolk sac
  - Kidneys
- 4-25.** Fetoplacental blood volume at term is which of the following?
- 125 mL/kg
  - 100 mL/kg
  - 75 mL/kg
  - 50 mL/kg

- 4-26.** Fetal hemoglobin F is produced at which of the following sites?
- Yolk sac
  - Kidney
  - Liver
  - Bone marrow
- 4-27.** Which of the following statements about immunoglobulin is correct?
- The bulk of maternal IgG transport to the fetus occurs in the second trimester.
  - Increased levels of IgM are found in newborns with congenital rubella, cytomegalovirus infection, or toxoplasmosis.
  - The newborn acquires significant passive immunity from the absorption of humoral antibodies ingested in colostrum.
  - Preterm neonates have an adequate amount of protective maternal antibodies.
- 4-28.** Which of the following fetal activities, not present until 24 weeks, is the last to develop?
- Opening the mouth
  - Swallowing
  - Breathing
  - Sucking
- 4-29.** In regard to the passage of unconjugated bilirubin across the placenta, which of the following is correct?
- It only passes from the fetal to the maternal side.
  - It only passes from the maternal to the fetal side.
  - It is not exchanged to any significant degree between mother and fetus.
  - It is bidirectional.
- 4-30.** Which of the following is correct in regard to fetal urine?
- At term, the fetus produces 650 mL/d.
  - It is hypertonic with respect to fetal plasma.
  - Hemorrhage and hypoxia result in increased urine output.
  - Fetal kidneys start to produce urine at 6 weeks' gestation.
- 4-31.** The limits of fetal viability are determined by which of the following process?
- Hepatic development
  - Fetal immunocompetence
  - Kidney formation
  - Pulmonary growth
- 4-32.** Ninety percent of surfactant (dry weight) is which of the following?
- Protein
  - Lipid
  - Carbohydrate
  - Water
- 4-33.** Which of the following statements regarding the sex-determining region is true?
- It is located on the long arm of the Y chromosome.
  - It directs development of the testis.
  - It is expressed in spermatozoa.
  - It is located on chromosomes 4 and 8.
- 4-34.** Which of the following stimulates the fetal testes to secrete testosterone?
- Follicle-stimulating hormone (FSH)
  - $5\alpha$ -dihydrotestosterone
  - hCG
  - HPL
- 4-35.** You are asked to see a newborn with genital ambiguity. An image of the newborn is provided. Imaging and blood tests have confirmed that this baby is 46,XX and has a uterus, fallopian tubes, and upper vagina. No testes are present. The diagnosis is which of the following?



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- Dysgenetic gonads
- True hermaphroditism
- Male pseudohermaphroditism
- Female pseudohermaphroditism



- 4-36.** In the case of 21-hydroxylase deficiency, which of the following drugs can be administered to the mother to reduce genital virilization in the fetus?
- a. Dexamethasone
  - b. Prednisone
  - c. Estradiol
  - d. Progesterone

- 4-37.** A 25-year-old nulligravida presents with a history of primary amenorrhea. She has an extremely short vagina, no axillary hair, and Tanner stage 5 breast development. An image of the patient's perineum is provided below. Which of the following is the likely diagnosis?



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- a. Congenital adrenal hyperplasia
- b. Female pseudohermaphroditism
- c. Androgen insensitivity syndrome
- d. Turner syndrome (46,X)

## CHAPTER 4 ANSWER KEY

| Question number | Letter answer | Page cited | Header cited                     |
|-----------------|---------------|------------|----------------------------------|
| 4-1             | a             | p. 78      | Determination of Gestational Age |
| 4-2             | b             | p. 79      | Morphological Growth             |
| 4-3             | b             | p. 79      | Figure 4-2                       |
| 4-4             | c             | p. 80      | Morphological Growth             |
| 4-5             | d             | p. 81      | Morphological Growth             |
| 4-6             | c             | p. 82      | Morphological Growth             |
| 4-7             | c             | p. 84      | The Placenta and Fetal Growth    |
| 4-8             | a             | p. 84      | Figure 4-9                       |
| 4-9             | b             | p. 84      | Figure 4-9                       |
| 4-10            | a             | p. 84      | Figure 4-9                       |
| 4-11            | b             | p. 86      | Placental Transfer               |
| 4-12            | d             | p. 86      | Placental Transfer               |
| 4-13            | b             | p. 86      | Placental Transfer               |
| 4-14            | b             | p. 87      | Fetal Nutrition                  |
| 4-15            | a             | p. 88      | Fetal Nutrition                  |
| 4-16            | d             | p. 88      | Fetal Nutrition                  |
| 4-17            | b             | p. 88      | Fetal Nutrition                  |
| 4-18            | c             | p. 88      | Fetal Physiology                 |
| 4-19            | c             | p. 89      | Fetal Circulation                |

| Question number | Letter answer | Page cited | Header cited                          |
|-----------------|---------------|------------|---------------------------------------|
| 4-20            | a             | p. 89      | Fetal Circulation                     |
| 4-21            | b             | p. 90      | Fetal Circulation                     |
| 4-22            | d             | p. 90      | Fetal Circulation                     |
| 4-23            | c             | p. 91      | Fetal Blood                           |
| 4-24            | c             | p. 91      | Fetal Blood                           |
| 4-25            | a             | p. 91      | Fetal Blood                           |
| 4-26            | c             | p. 92      | Fetal Blood                           |
| 4-27            | b             | p. 93      | Ontogeny of the Fetal Immune Response |
| 4-28            | d             | p. 93      | Nervous System and Sensory Organs     |
| 4-29            | d             | p. 95      | Gastrointestinal System               |
| 4-30            | a             | p. 95      | Urinary System                        |
| 4-31            | d             | p. 96      | Lungs                                 |
| 4-32            | b             | p. 96      | Lungs                                 |
| 4-33            | b             | p. 101     | Sexual Differentiation                |
| 4-34            | c             | p. 101     | Sexual Differentiation                |
| 4-35            | d             | p. 102     | Figure 4-19                           |
| 4-36            | a             | p. 102     | Genital Ambiguity of the Newborn      |
| 4-37            | c             | p. 103     | Genital Ambiguity of the Newborn      |

## CHAPTER 5

# Maternal Physiology

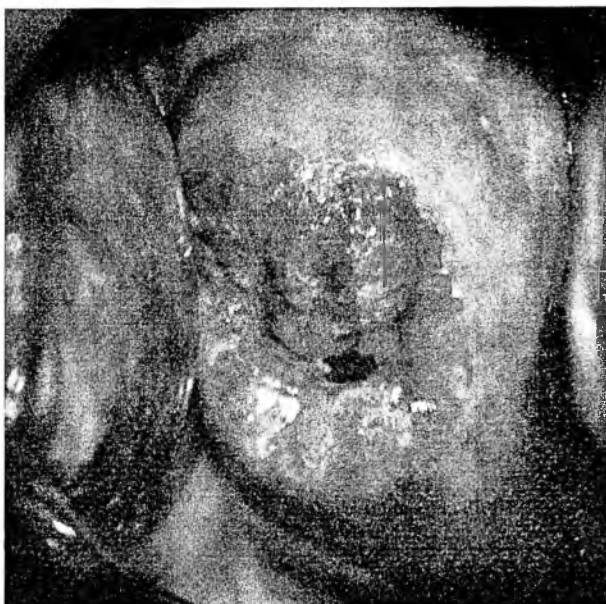
5-1. In the nonpregnant woman, the uterus is an almost solid structure weighing approximately which of the following?

- a. 40 g
- b. 70 g
- c. 100 g
- d. 130 g

5-2. Uterine blood flow near term is which of the following?

- a. 50–100 mL/min
- b. 100–300 mL/min
- c. 450 to 600 mL/min
- d. 1,000–1,400 mL/min

5-3. In the image below, cervical eversion is demonstrated. What kind of epithelium makes up this portion of the cervix?



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- a. Columnar
- b. Squamous
- c. Serous
- d. Brush border cells

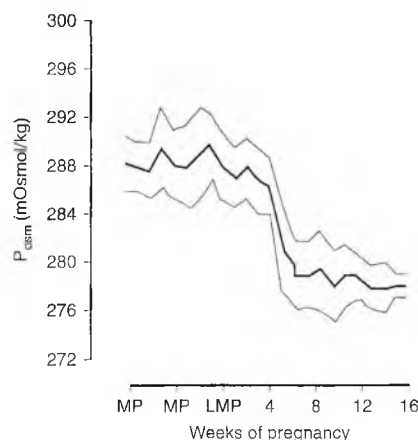
5-4. In pregnancy, the midline of the abdominal skin becomes especially pigmented and is called which of the following?

- a. Melasma gravidarum
- b. Linea alba
- c. Chloasma
- d. Linea nigra

5-5. By the third trimester, which of the following describes the maternal basal metabolic rate?

- a. Decreased by 5%
- b. Increased by 10% to 20% compared with the non-pregnant state
- c. Increased an additional 25% above normal pregnancy values in women with twin gestations
- d. None of the above

5-6. The graphic illustrates which of the following points? (LMP = last menstrual period; MP = menstrual period.)



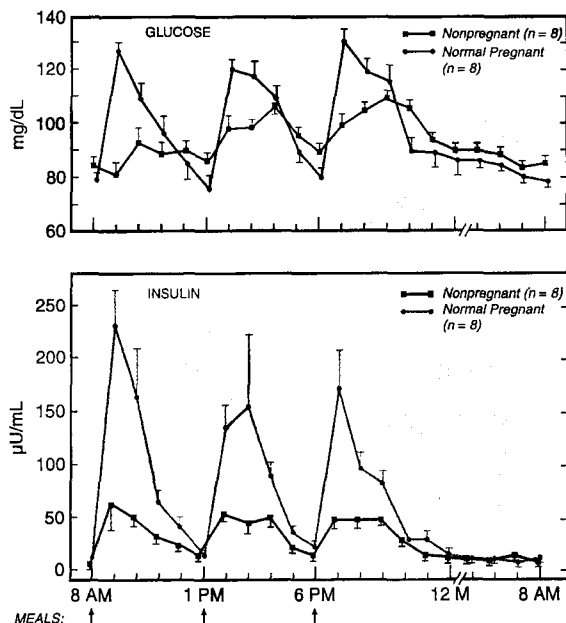
Reproduced, with permission, from Cunningham FG, et al: Williams Obstetrics, 22nd ed. New York, McGraw-Hill, 2005.

- a. Maternal plasma osmolality increases overall in pregnancy.
- b. Maternal plasma osmolality decreases early in pregnancy.
- c. Maternal plasma osmolality is affected most by increases in sodium.
- d. Maternal plasma osmolality does not change during pregnancy.

5-7. The products of conception, maternal blood volume expansion, breast gland growth, and uterine growth account for how many grams of protein accrued during pregnancy?

- 250 g
- 500 g
- 750 g
- 1,000 g

5-8. The graphic concerning insulin and glucose during pregnancy suggests which of the following?



Reproduced, with permission, from Cunningham FG, Leveno KJ, Bloom SL, et al: Williams Obstetrics, 23rd ed. New York, McGraw-Hill, 2010.

- Mild fasting hyperglycemia
- Postprandial hypoglycemia
- Hypoinsulinemia
- Hyperinsulinemia

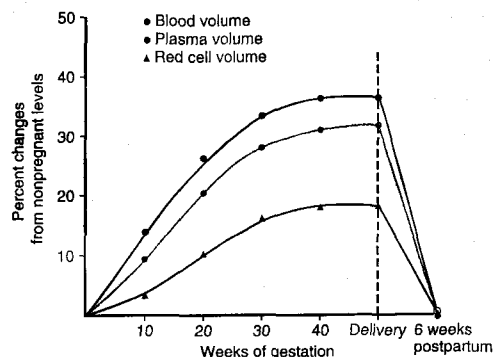
5-9. Concerning fat metabolism during pregnancy, which of the following is true?

- Increased fat stores are stored peripherally.
- Triacylglycerol and cholesterol levels are increased, but low-density lipoproteins (LDL) and very low-density lipoproteins (VLDL) are decreased.
- Mechanisms responsible for changes in fat levels include lipolytic and decreased lipoprotein lipase activities in adipose tissue.
- None of the above.

5-10. Which of the following occurs during pregnancy?

- 500 mEq of sodium and 200 mEq of potassium are retained.
- Total serum calcium levels decline during pregnancy.
- The fetal skeleton accrues approximately 70 g of calcium by term.
- Serum magnesium levels increase.

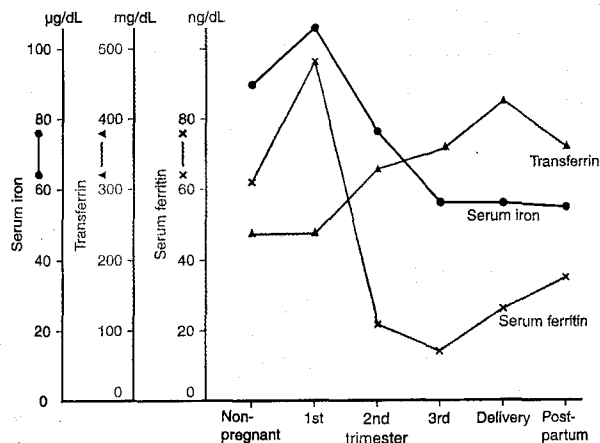
5-11. As illustrated by this graphic, which of the following occurs during pregnancy?



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- Hematocrit increases during pregnancy.
- Red cell volume does not increase until 20 weeks.
- Total blood volume increases 40% during pregnancy.
- Hematocrit increases due to increased red cell volume relative to plasma volume.

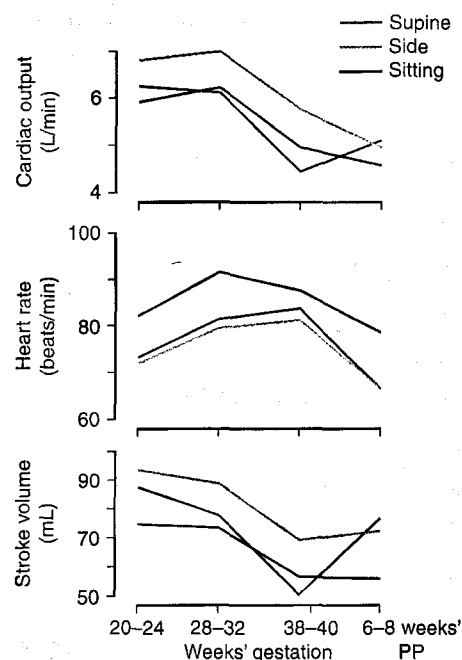
5-12. This graphic suggests which of the following?



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- Serum iron is unchanged in the first trimester.
- Serum ferritin is increased in the second trimester.
- Serum transferrin is increased by the end of pregnancy.
- Serum ferritin is increased by the end of pregnancy.

- 5-13.** Concerning iron requirements in pregnancy, which of the following is true?
- 500 mg of iron is required for normal pregnancy.
  - Of the iron requirement, 300 gm is used for the increased total volume of circulating erythrocytes.
  - Iron requirements of pregnancy are usually not available from iron stores in most women.
  - 500 mg of iron is transferred to the placenta and fetus.
- 5-14.** Concerning immunological function during pregnancy, which of the following is true?
- Th1 response is suppressed.
  - There is up regulation of T-cytotoxic cells.
  - Th2 cells are downregulated.
  - All of the above
- 5-15.** Concerning the coagulation system in pregnancy, which of the following is true?
- Fibrinogen levels are increased to a median of 300 mg/dL.
  - Decreases in platelet concentration are solely due to hemodilution.
  - Fibrinolytic activity is normally reduced.
  - Mean platelet count is 250,000/ $\mu$ L.
- 5-16.** The graphic shown above demonstrates which of the following points?
- Cardiac output increases between 20 and 40 weeks' gestation.
  - Heart rate increases when pregnant women are sitting compared with lying supine.
  - Stroke volume increases when pregnant women are supine compared with lying on their sides.
  - Cardiac output increases postpartum while sitting compared with lying supine.



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- 5-17.** This table illustrates which of the following points?
- Mean arterial pressure is significantly increased in pregnancy.
  - Serum colloid osmotic pressure is similar between pregnant and nonpregnant patients.
  - The COP-PCWP gradient is significantly decreased in pregnancy.
  - Increased left stroke work index indicates pregnancy is a continuous high output state.

**TABLE 5-1.** Central Hemodynamic Changes in 10 Normal Nulliparous Women Near Term and Postpartum

|                                                            | Pregnant <sup>a</sup> (35-38 wks) | Postpartum (11-13 wks) | Change <sup>b</sup> |
|------------------------------------------------------------|-----------------------------------|------------------------|---------------------|
| Mean arterial pressure (mm Hg)                             | 90 ± 6                            | 86 ± 8                 | NSC                 |
| Pulmonary capillary wedge pressure (mm Hg)                 | 8 ± 2                             | 6 ± 2                  | NSC                 |
| Central venous pressure (mm Hg)                            | 4 ± 3                             | 4 ± 3                  | NSC                 |
| Heart rate (beats/min)                                     | 83 ± 10                           | 71 ± 10                | + 17%               |
| Cardiac output (L/min)                                     | 6.2 ± 1.0                         | 4.3 ± 0.9              | + 43%               |
| Systemic vascular resistance (dyne/sec/cm <sup>-5</sup> )  | 1210 ± 266                        | 1530 ± 520             | -21%                |
| Pulmonary vascular resistance (dyne/sec/cm <sup>-5</sup> ) | 78 ± 22                           | 119 ± 47               | -34%                |
| Serum colloid osmotic pressure (mm Hg)                     | 18.0 ± 1.5                        | 20.8 ± 1.0             | -14%                |
| COP-PCWP gradient (mm Hg)                                  | 10.5 ± 2.7                        | 14.5 ± 2.5             | -28%                |
| Left ventricular stroke work index (g/m/m <sup>2</sup> )   | 48 ± 6                            | 41 ± 8                 | NSC                 |

<sup>a</sup>Measured in lateral recumbent position.

<sup>b</sup>Changes significant unless NSC = no significant change.

COP = colloid osmotic pressure; PCWP = pulmonary capillary wedge pressure.

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**5-18.** Which of the following are true regarding angiotensin II and its effects?

- a. Normotensive nulliparas are refractory.
- b. Hypertensive patients become and then remain refractory.
- c. Vascular response is probably estrogen related.
- d. Increased refractoriness of vessels results primarily from changes in angiotensin II structure.

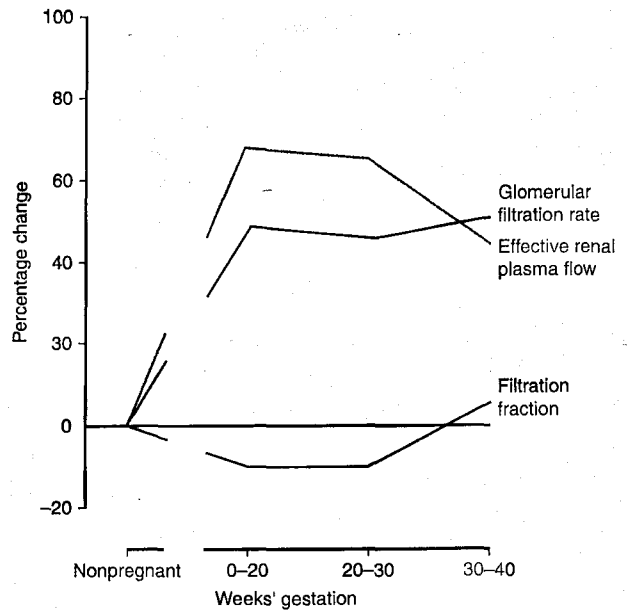
**5-19.** Which statement below is correct?

- a. Tidal volume and resting minute ventilation decrease significantly as pregnancy advances.
- b. Functional residual capacity and residual volume increase as a result of an elevated diaphragm during pregnancy.
- c. Increases in minute ventilation are driven primarily by low expiratory reserve volume.
- d. Lung compliance is unaffected by pregnancy.

**5-20.** Concerning acid-base equilibrium during pregnancy, which of the following is true?

- a. Physiologic dyspnea results from slightly decreased tidal volume that lowers  $\text{CO}_2$  levels.
- b. Plasma bicarbonate decreases from 26 to approximately 22 mmol/L.
- c. Estrogen acts centrally, where it appears to lower the threshold and increase the sensitivity of the chemoreflex response to  $\text{CO}_2$ .
- d. The maternal oxygen-disassociation curve is shifted to the right.

**5-21.** This graphic illustrates which of the following?



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- a. Glomerular filtration rate (GFR) increases during pregnancy
- b. Effective renal plasma flow decreases during pregnancy
- c. Filtration fraction is mildly increased by the end of pregnancy
- d. All of the above

**5-22.** Concerning the urinary system during pregnancy, which of the following is true?

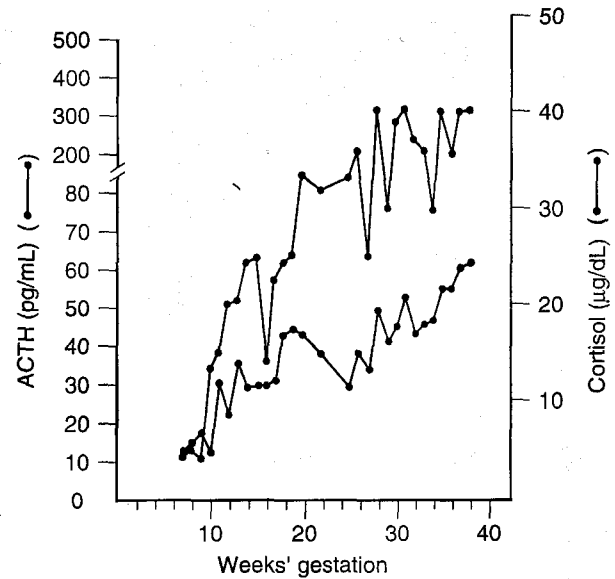
- a. Serum creatinine levels increase from a mean of 0.5 mg to 0.7 mg/dL.
- b. Glucosuria is always abnormal.
- c. After the uterus rises out of the pelvis, ureteral dilation occurs exclusively on the right side.
- d. Bladder pressure increases from 8 cm  $\text{H}_2\text{O}$  early in pregnancy to 20 cm  $\text{H}_2\text{O}$  at term.

**5-23.** Concerning the gastrointestinal (GI) tract during pregnancy, which of the following is true?

- a. Gastric emptying time is increased in each trimester.
- b. Pyrosis is caused by reflux of acidic secretions into the lower esophagus.
- c. Epulis is a systemic highly vascular swelling of mucosal membranes.
- d. Gastric emptying time is shortened during labor.

- 5-24.** Which of the following is true concerning the liver and its proteins and enzymes produced during pregnancy?
- Liver size increases.
  - Albumin concentration increases.
  - Alkaline phosphatase activity almost doubles.
  - Portal vein diameter remains unchanged.
- 5-25.** Which of the following is true concerning the gallbladder during pregnancy?
- It has reduced contractility caused by progesterone.
  - It empties more completely.
  - Stasis leads to formation of pyruvate-containing stones.
  - Cholestasis is linked to high circulating levels of progesterone.
- 5-26.** Concerning the pituitary gland during pregnancy, which of the following is true?
- Pituitary prolactinoma incidence is increased.
  - Compression of the optic chiasm sufficient to reduce visual fields is rare.
  - Microadenomas usually measure > 15 mm.
  - None of the above
- 5-27.** Concerning the thyroid gland during pregnancy, which of the following is true?
- It undergoes enlargement through hypertrophy.
  - Free T<sub>4</sub> increases its mean value by term.
  - Total T<sub>4</sub> increases during pregnancy.
  - Human chorionic gonadotropin (hCG), which mimics thyroid-stimulating hormone, has declining levels beginning at approximately 20 weeks.
- 5-28.** Concerning the parathyroid gland during pregnancy, which of the following is true?
- Increase in magnesium concentration stimulates release of parathyroid hormone (PTH).
  - All markers of bone turnover increase.
  - Estrogen tends to facilitate the action of PTH on bone resorption.
  - Calcium for the fetal skeleton is derived from exogenous sources.
- 5-29.** Concerning the adrenal gland during pregnancy, which of the following is true?
- It increases in 15% in size.
  - Its rate of cortisol secretion increases.
  - It decreases aldosterone secretion significantly at 15 weeks.
  - Maternal plasma levels of androstenedione and testosterone are increased.

- 5-30.** This graphic illustrates which of the following?



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- Maximum secretion of cortisol is reached by 20 weeks.
  - Serum cortisol secretion decreases throughout pregnancy.
  - Serum adrenocorticotrophic hormone (ACTH) secretion increases throughout pregnancy.
  - None of the above
- 5-31.** Concerning the musculoskeletal system during pregnancy, which of the following is true?
- Progressive scoliosis is characteristic.
  - Joint laxity is correlated with increased maternal levels of estradiol.
  - Progressive lordosis is characteristic.
  - Most joint relaxation occurs in the second half of pregnancy.
- 5-32.** Concerning the central nervous system during pregnancy, which of the following is true?
- Memory decline is typically limited to the third trimester.
  - Attention and memory are typically decreased in women receiving magnesium sulfate.
  - Mean blood flow in the middle cerebral artery (MCA) and posterior cerebral artery (PCA) increases in third trimester.
  - Pregnancy significantly alters cerebrovascular autoregulation.

## CHAPTER 5 ANSWER KEY

| Question number | Letter answer | Page cited | Header cited                       |
|-----------------|---------------|------------|------------------------------------|
| 5-1             | b             | p. 107     | Uterus                             |
| 5-2             | c             | p. 108     | Uteroplacental Blood Flow          |
| 5-3             | a             | p. 109     | Cervix                             |
| 5-4             | d             | p. 111     | Hyperpigmentation                  |
| 5-5             | b             | p. 111     | Metabolic Changes                  |
| 5-6             | b             | p. 112     | Figure 5-3                         |
| 5-7             | d             | p. 113     | Protein Metabolism                 |
| 5-8             | d             | p. 113     | Figure 5-4                         |
| 5-9             | c             | p. 113     | Fat Metabolism                     |
| 5-10            | b             | p. 114     | Electrolyte and Mineral Metabolism |
| 5-11            | c             | p. 115     | Figure 5-5                         |
| 5-12            | c             | p. 115     | Figure 5-6                         |
| 5-13            | c             | p. 115     | Iron Requirements                  |
| 5-14            | a             | p. 116     | Immunological Functions            |
| 5-15            | c             | p. 116     | Coagulation and Fibrinolysis       |
| 5-16            | b             | p. 118     | Figure 5-7                         |

| Question number | Letter answer | Page cited | Header cited                             |
|-----------------|---------------|------------|------------------------------------------|
| 5-17            | c             | p. 120     | Table 5-3                                |
| 5-18            | a             | p. 120     | Renin, Angiotensin II, and Plasma Volume |
| 5-19            | d             | p. 121     | Pulmonary Function                       |
| 5-20            | b             | p. 122     | Acid-Base Equilibrium                    |
| 5-21            | d             | p. 123     | Figure 5-13                              |
| 5-22            | d             | p. 123     | Urinary System                           |
| 5-23            | b             | p. 125     | Gastrointestinal Tract                   |
| 5-24            | c             | p. 126     | Liver                                    |
| 5-25            | a             | p. 126     | Gall Bladder                             |
| 5-26            | b             | p. 126     | Pituitary Gland                          |
| 5-27            | c             | p. 127     | Thyroid Gland                            |
| 5-28            | b             | p. 128     | Parathyroid Glands                       |
| 5-29            | d             | p. 129     | Adrenal Glands                           |
| 5-30            | c             | p. 129     | Figure 5-18                              |
| 5-31            | c             | p. 129     | Musculoskeletal System                   |
| 5-32            | a             | p. 130     | Central Nervous System                   |

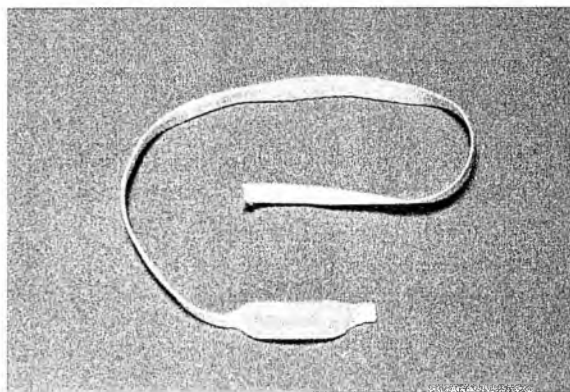


## CHAPTER 6

### Parturition

- 6-1. Of the four phases of parturition, phase 3 is characterized by which of the following?
- Activation
  - Involution
  - Quiescence
  - Stimulation
- 6-2. Which phase of parturition corresponds to the clinical stages of labor?
- Phase 1
  - Phase 2
  - Phase 3
  - Phase 4
- 6-3. During which of the stages of labor is the fetus delivered?
- Stage 1
  - Stage 2
  - Stage 3
  - Stage 4
- 6-4. During phase 1 of parturition, which of the following is true regarding uterine and cervical changes?
- Rare uterine contractions, cervical ripening
  - Rare uterine contractions, cervical softening
  - Rhythmic uterine contractions, cervical ripening
  - Rhythmic uterine contractions, cervical effacement
- 6-5. Of the following, which is a significant factor in the cervical changes found during phase 2 of parturition?
- Smooth muscle atrophy
  - Collagen disorganization
  - Smooth muscle hypertrophy
  - Decreases in low-molecular-weight hyaluronidase levels
- 6-6. Compared with the uterine body, the cervix has a significantly lower percentage of which of the following?
- Collagen
  - Proteoglycans
  - Smooth muscle
  - Glycosaminoglycans

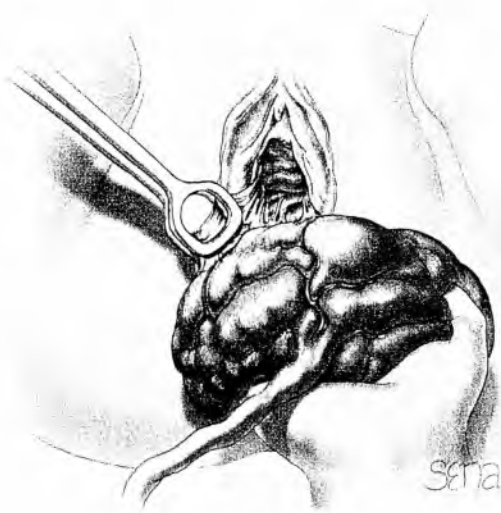
- 6-7. The vaginal insert shown in the image below is one of which class of agents used clinically to effect cervical ripening?



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- Oxytocin
  - Beta mimetics
  - Prostaglandins
  - Nonsteroidal anti-inflammatory drugs
- 6-8. Which of the following is the **LEAST** important to the normal progress of labor?
- Cervical position
  - Uterine contractions
  - Resistance of maternal tissues
  - Maternal intra-abdominal pressure
- 6-9. Which of the following are considered plausible causes of uterine contraction pain?
- Myometrial hypoxia
  - Uterine peritoneum stretching
  - Compression of nerve ganglia in the cervix
  - All of the above
- 6-10. Which of the following is the average amniotic fluid pressure (in mm Hg) generated by contractions during phase 3 of parturition?
- 20
  - 40
  - 80
  - 100

- 6-11.** To allow effective fetal expulsion, which of the following changes is needed during labor?
- Uterine anteversion
  - Thickening of the levator ani muscles
  - Lengthening and narrowing of the uterine body
  - Thinning of the fundal myometrium and lower uterine segment
- 6-12.** After complete cervical dilatation, which of the following is the most important factor in the expulsion of the fetus?
- Uterine contractions
  - Perineal body elasticity
  - Levator ani tensile strength
  - Maternal intra-abdominal pressure
- 6-13.** During stage 3 of labor, which of the following forces is the primary mechanism for placental separation?
- Gravity
  - Maternal pushing
  - Uterine contraction
  - Spiral artery pressure
- 6-14.** In the image given below, the placenta is expelled by which of the following mechanisms?

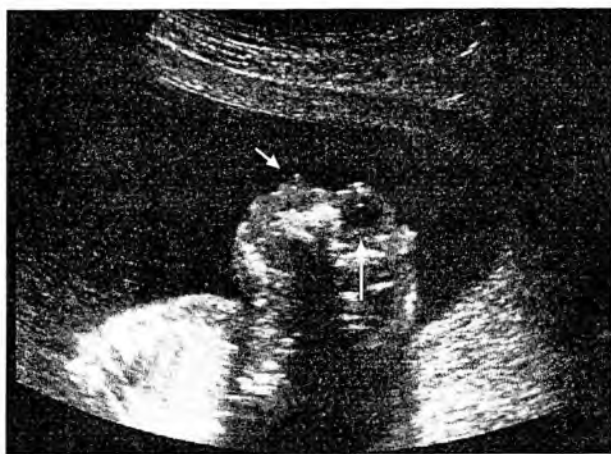


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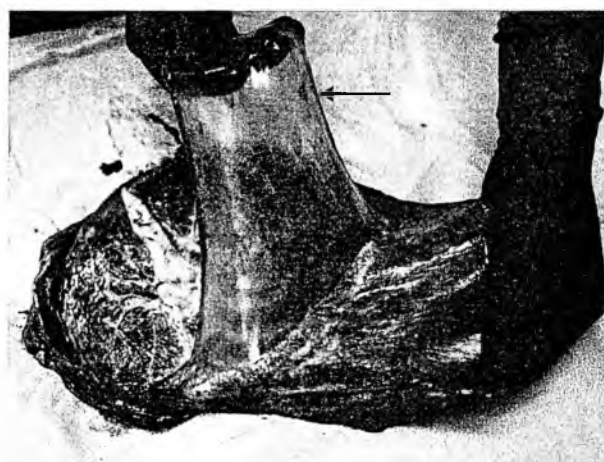
- Worley
- Duncan
- Schultze
- Braxton-Hicks

- 6-15.** Phase 4 of parturition is known clinically by what name?
- Involution
  - Puerperium
  - Latent phase of labor
  - Active phase of labor
- 6-16.** Compared with skeletal muscle, uterine smooth muscle offers which of the following advantages?
- Generates forces along one axis
  - Has greater muscle fiber shortening
  - Displays more structured alignment of muscle fibers
  - All of the above
- 6-17.** Which of the following is important for myometrial contraction?
- Extracellular magnesium
  - Actin-tubulin protein pairs
  - G-protein-coupled receptors
  - Gap junctions composed of decorin subunits
- 6-18.** In most mammals, the implementation of phase 1 of parturition is due to which of the following?
- Cortisol withdrawal
  - Progesterone withdrawal
  - Inflammatory cell activation
  - Increases in oxytocin receptors
- 6-19.** Ritodrine and terbutaline bind to beta-adrenergic receptors to create which of the following cellular responses?
- Decreased cGMP levels to prompt cervical softening
  - Increased cAMP levels to prompt myometrial relaxation
  - Decreased intracellular  $\text{Ca}^{2+}$  levels to halt cervical ripening
  - Increased extracellular  $\text{Mg}^{2+}$  levels to halt myometrial relaxation
- 6-20.** Which of the following is the initial and rate-limiting enzyme in prostaglandin inactivation?
- Cyclooxygenase
  - Phospholipase  $\text{A}_2$
  - Prostaglandin isomerase
  - Prostaglandin dehydrogenase
- 6-21.** Nonsteroidal anti-inflammatory drugs affect myometrial activity through which of the following actions?
- Phospholipase  $\text{A}_2$  activation to create relaxation
  - Prostaglandin synthase inhibition to create relaxation
  - Prostaglandin isomerase inhibition to create contraction
  - 15-hydroxyprostaglandin dehydrogenase activation to create contraction

- 6-22. Mifepristone acts as an abortifacient through antagonism of which of the following?
- Cortisol
  - Estrogen
  - Progesterone
  - Prostaglandin  $E_2$
- 6-23. In humans, which of the following placenta-derived hormones has been strongly linked as a primary initiator of parturition?
- Oxytocin
  - Growth hormone variant (hGH-V)
  - Corticotropin-releasing hormone (CRH)
  - Growth hormone-releasing hormone (GHRH)
- 6-24. Which of the following is true of the fetal adrenal gland near term?
- Equal in size to that in adulthood
  - Daily steroid production equals that in adulthood
  - 1/3 larger in male fetuses compared with that in females
  - All of the above
- 6-25. Which of the following abnormalities of normal parturition have been associated with this neural tube defect? The short arrow shown in the image below points to the fetal nose, and the long arrow to the orbit.
- 6-26. The uterotonic, oxytocin, is produced by all EXCEPT which of the following?
- Placenta
  - Maternal decidua
  - Maternal pituitary
  - Fetal adrenal gland
- 6-27. Because of its role as a uterotonic in phase 3 of parturition, which of the following is used most successfully in first- or second-trimester abortion?
- Oxytocin
  - Endothelin-1
  - Prostaglandin
  - Platelet-activating factor (PAF)
- 6-28. Roles of the structure (*arrow*) as shown in the image below include which of the following?



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- Provides tensile strength
  - Produces enzymes that inactivate uterotonins
  - Provides a vascular connection between the decidua and amniotic fluid
  - All of the above
- 6-29. Of the following causes of preterm birth, which is the most common etiology?
- Idiopathic
  - Uterine anomalies
  - Intrauterine infection
  - Prematurely ruptured membranes

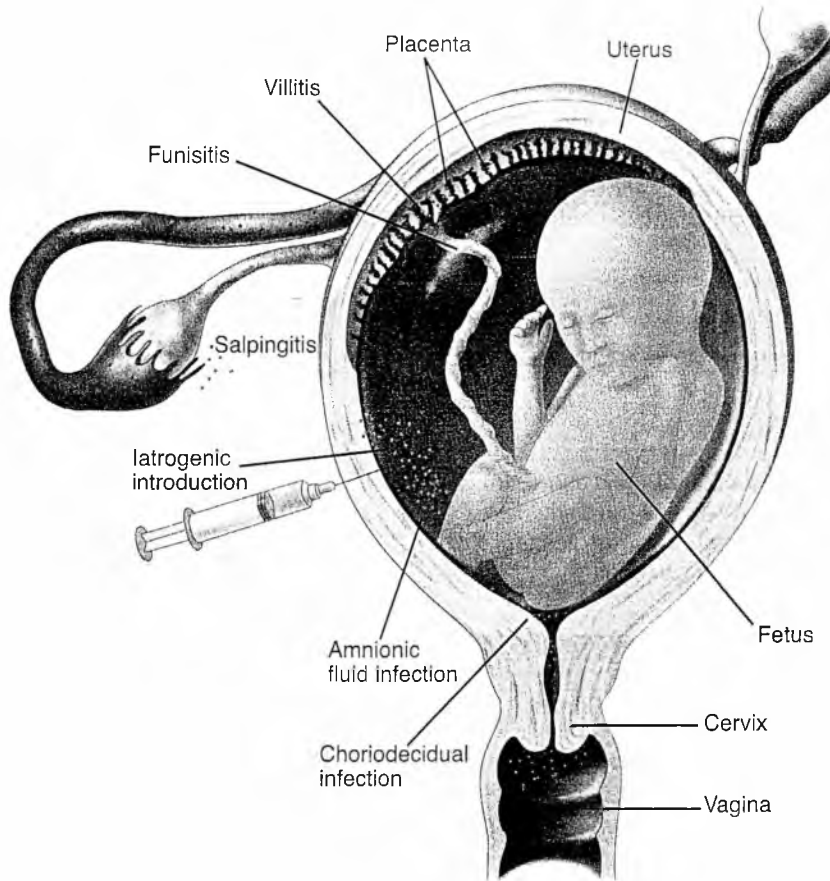
- Preterm labor
- Prolonged gestation
- Absent cervical ripening
- Prolonged latent phase of first-stage labor

**6-30.** In most cases of preterm premature rupture of membranes, which of the following is the suspected underlying cause?

- a. Intrauterine infection
- b. Maternal diabetes mellitus
- c. Thrombosis in amnion vasculature
- d. Maternal genetic defects in collagen synthesis

**6-31.** In pregnancies complicated by an infectious cause of preterm labor, which of the following routes of initial infection is considered most common (see figure below)?

- a. Ascension of vaginal bacteria
- b. Transplacental transfer of maternal infection
- c. Retrograde transmission through fallopian tubes
- d. Iatrogenic inoculation during transamniotic procedures



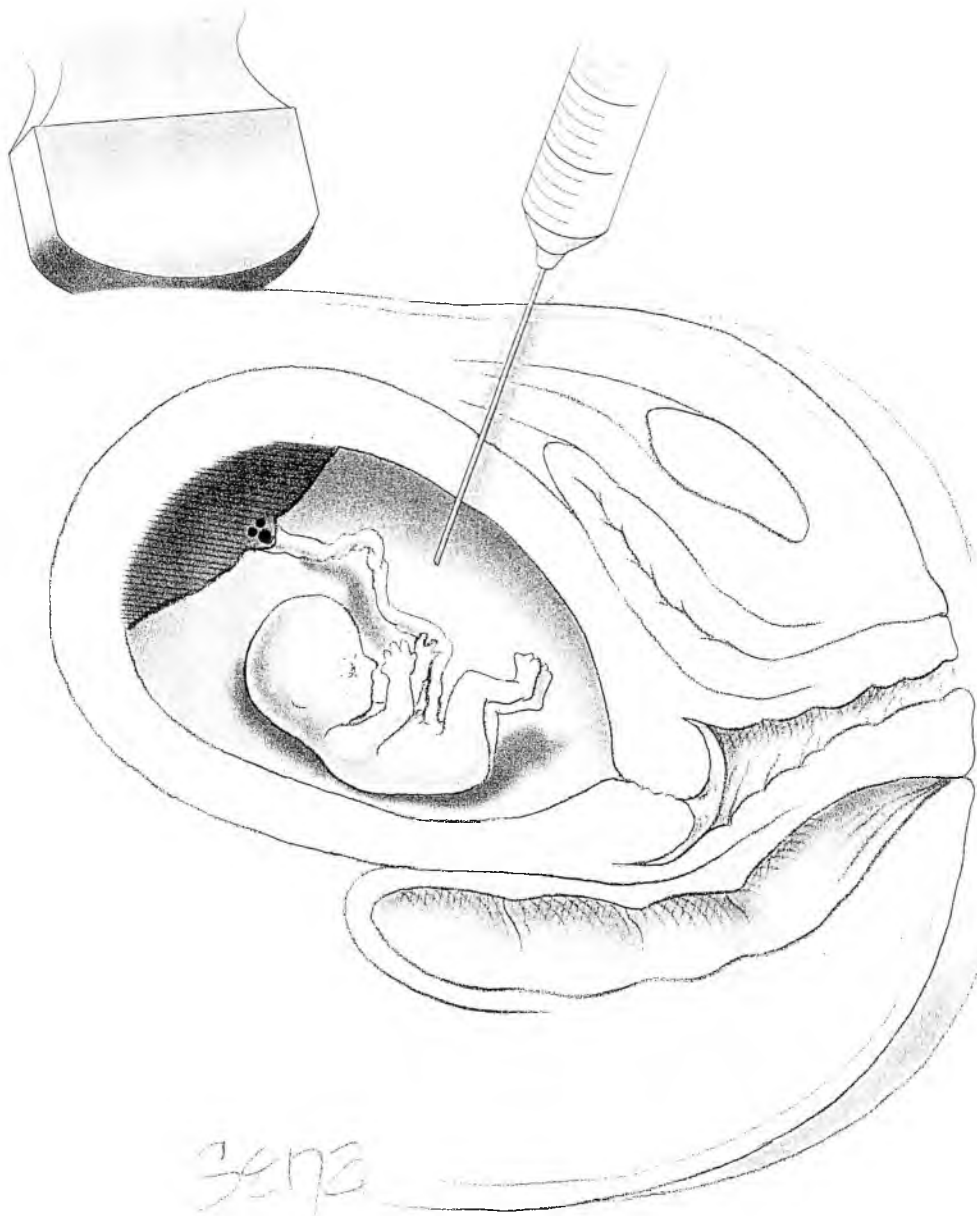
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## CHAPTER 6 ANSWER KEY

| Question number | Letter answer | Page cited | Header cited                                                      | Question number | Letter answer | Page cited | Header cited                                                          |
|-----------------|---------------|------------|-------------------------------------------------------------------|-----------------|---------------|------------|-----------------------------------------------------------------------|
| 6-1             | d             | p. 136     | Phases of Parturition                                             | 6-18            | b             | p. 151     | Progesterone and Estrogen Contributions to Phase 1                    |
| 6-2             | c             | p. 136     | Phases of Parturition                                             | 6-19            | b             | p. 152     | Beta-Adrenoreceptors                                                  |
| 6-3             | b             | p. 137     | Figure 6-2                                                        | 6-20            | d             | p. 153     | Prostaglandins                                                        |
| 6-4             | b             | p. 136     | Phase 1 of Parturition: Uterine Quiescence and Cervical Softening | 6-21            | b             | p. 153     | Prostaglandins                                                        |
| 6-5             | b             | p. 138     | Cervical Ripening During Phase 2                                  | 6-22            | c             | p. 155     | Progesterone Receptor Antagonists and Human Parturition               |
| 6-6             | c             | p. 140     | Cervical Connective Tissue                                        | 6-23            | c             | p. 156     | Fetal Endocrine Cascades Leading to Parturition                       |
| 6-7             | c             | p. 141     | Induction and Prevention of Cervical Ripening                     | 6-24            | a             | p. 157     | Actions of Corticotropin-Releasing Hormone on the Fetal Adrenal Gland |
| 6-8             | a             | p. 141     | Phase 3 of Parturition: Labor                                     | 6-25            | b             | p. 158     | Fetal Anomalies and Delayed Parturition                               |
| 6-9             | d             | p. 141     | Uterine Labor Contractions                                        | 6-26            | d             | p. 159     | Role of Oxytocin in Phases 3 and 4 of Parturition                     |
| 6-10            | b             | p. 142     | Uterine Labor Contractions                                        | 6-27            | c             | p. 159     | Prostaglandins and Phase 3 of Parturition                             |
| 6-11            | c             | p. 142     | Distinct Lower and Upper Uterine Segments                         | 6-28            | a             | p. 161     | Amnion                                                                |
| 6-12            | d             | p. 143     | Ancillary Forces in Labor                                         | 6-29            | a             | p. 163     | Figure 6-24                                                           |
| 6-13            | c             | p. 146     | Third Stage of Labor: Delivery of Placenta and Membranes          | 6-30            | a             | p. 163     | Preterm Prematurely Ruptured Membranes                                |
| 6-14            | c             | p. 147     | Placental Extrusion                                               | 6-31            | a             | p. 164     | Infection and Preterm Labor                                           |
| 6-15            | b             | p. 147     | Phase 4 of Parturition: The Puerperium                            |                 |               |            |                                                                       |
| 6-16            | b             | p. 147     | Anatomical and Physiological Considerations of the Myometrium     |                 |               |            |                                                                       |
| 6-17            | c             | p. 148     | Regulation of Myometrial Contraction and Relaxation               |                 |               |            |                                                                       |

SECTION 3

# ANTEPARTUM



## CHAPTER 7

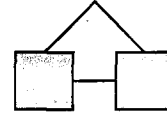
# Preconceptional Counseling

- 7-1. What percentage of American women use tobacco products prior to becoming pregnant?
- 4%
  - 10%
  - 23%
  - 34%
- 7-2. What portion of pregnancies in the United States is unplanned?
- 1/4
  - 1/3
  - 1/2
  - 1/10
- 7-3. Preconceptional counseling and evaluation of a woman with diabetes mellitus should include all **EXCEPT** which of the following?
- Hemoglobin A<sub>1c</sub>
  - Bone density testing
  - Retinal examination
  - 24-hour urine collection for protein
- 7-4. What is the approximate risk of major congenital malformation in her fetus if a diabetic woman's glycosylated hemoglobin is 10.8%?
- 3–5%
  - 15%
  - 25%
  - None of the above
- 7-5. All **EXCEPT** which of the following are requirements that must be met prior to discontinuing antiseizure medication prior to pregnancy?
- Normal intelligence
  - Single type of seizure
  - Without seizure for 1 year
  - Normal electroencephalogram (EEG) with treatment
- 7-6. Which of the following antiseizure medications, when taken as monotherapy, is associated with the highest rate of major congenital malformations?
- Phenytoin
  - Valproic acid
  - Phenobarbital
  - Carbamazepine
- 7-7. Which of the following is the most frequent structural fetal malformation?
- Facial clefts
  - Cardiac anomalies
  - Neural-tube defects
  - Renal abnormalities
- 7-8. Preconceptional folic acid supplementation can reduce the recurrence risk of having a child with a neural-tube defect by what percentage?
- 11%
  - 26%
  - 50%
  - 72%
- 7-9. Which fetal tissues are most susceptible to damage by high blood phenylalanine levels?
- Renal and hepatic
  - Cardiac and renal
  - Neural and cardiac
  - Neural and hepatic
- 7-10. What is the risk of spontaneous abortion in women with untreated phenylketonuria?
- 12%
  - 24%
  - 40%
  - 73%
- 7-11. Worldwide, what are the most common single-gene disorders?
- Cystic fibrosis mutations
  - Phenylketonuria mutations
  - Hemoglobinopathies
  - Glycogen-storage diseases

- 7-12.** Ashkenazi Jewish individuals should be offered preconceptional carrier screening for all **EXCEPT** which of the following?
- Canavan disease
  - Cystic fibrosis
  - $\beta$ -thalassemia
  - Tay-Sachs disease
- 7-13.** Tay-Sachs disease is inherited in what fashion?
- X-linked dominant
  - X-linked recessive
  - Autosomal dominant
  - Autosomal recessive
- 7-14.** The American College of Obstetricians and Gynecologists recommends preconceptional screening for Tay-Sachs if both members of a couple are of what descent?
- Cajun
  - Mediterranean
  - Southeast Asian
  - None of the above
- 7-15.** What is the carrier frequency for cystic fibrosis among individuals of Eastern European descent?
- 1/15
  - 1/29
  - 1/89
  - 1/127
- 7-16.** Elements of a preconceptional counseling visit should include which of the following?
- Alcohol use
  - Paternal age
  - Pregnancy outcomes
  - All of the above
- 7-17.** Smoking during pregnancy increases the risk of all **EXCEPT** which of the following?
- Placenta previa
  - Fetal-growth restriction
  - Structural fetal abnormalities
  - Premature rupture of membranes
- 7-18.** Maternal obesity is associated with all **EXCEPT** which of the following maternal complications?
- Preeclampsia
  - Cesarean delivery
  - Gestational diabetes
  - Spontaneous preterm labor

- 7-19.** What percentage of mothers with preterm infants reported that they had experienced physical abuse?
- 4%
  - 12%
  - 24%
  - 42%

- 7-20.** What does this symbol represent on a family pedigree?



Modified, with permission, from Thompson MW, McInnes RR, Huntington FW (eds): *Genetics in Medicine*, 5th ed. Philadelphia, Saunders, 1991.

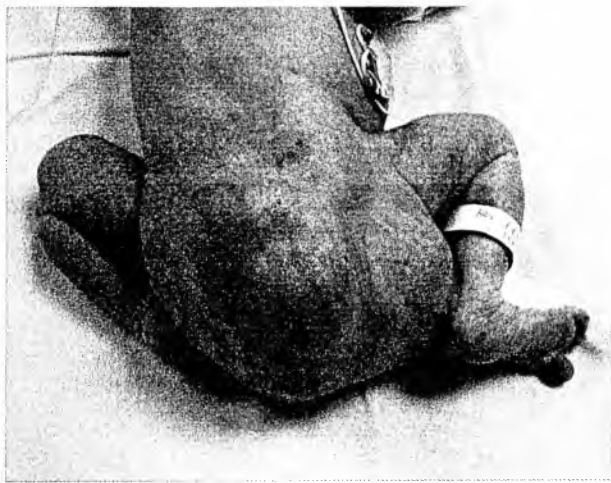
- Dizygotic twins
  - Conjoined twins
  - Monozygotic twins
  - None of the above
- 7-21.** Pregnant women should limit their weekly dietary intake of fish to 12 ounces and should eliminate consumption of certain kinds of fish to minimize exposure to which neurotoxin?
- Mercury
  - Cadmium
  - Algae-related toxin
  - Organic phosphate
- 7-22.** How should a woman be counseled if she inadvertently becomes pregnant within 1 month of receiving a live-virus vaccine?
- No fetal risk
  - Theoretical, but no definite risks
  - Serious fetal risks, but uncommon
  - Significant risk and pregnancy termination is recommended
- 7-23.** Which of the following is an important goal of preconceptional counseling?
- Prevent unintended pregnancy
  - Initiate preventive care measures
  - Identify genetic and obstetrical risk factors
  - All of the above



**7-24.** A 19-year-old G3 P2 at 28 weeks' gestation is embarrassed to admit that she has been craving and eating ice and dirt. She thinks she must be "going crazy." What test is most likely to be abnormal?

- a. Toxicology screen
- b. Liver function tests
- c. Complete blood count
- d. EEG

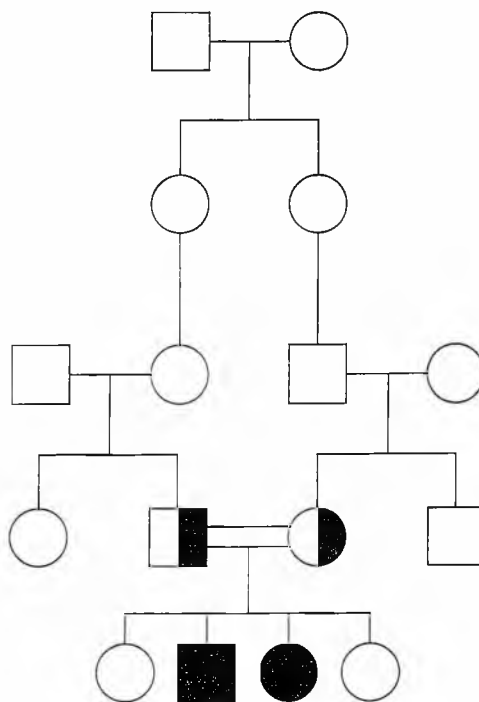
**7-25.** Which of the following patients is at increased risk for having an infant with this congenital abnormality?



Contributed by Dr. Michael Zaretsky.

- a. A diabetic with a hemoglobin A<sub>1c</sub> of 9.9%
- b. A woman whose last pregnancy was complicated by anencephaly
- c. A woman with a seizure disorder that is well controlled on valproic acid
- d. All of the above

**7-26.** All EXCEPT which of the following diseases are inherited in the manner demonstrated by this pedigree?



Reproduced, with permission, from Hay Jr WW, Levin MJ, Sondheimer JM, et al: *Current Diagnosis and Treatment: Pediatrics*, 19th ed. New York, McGraw-Hill, 2009. Figure 35-7.

- a. Cystic fibrosis
- b. Phenylketonuria
- c. Diabetes mellitus
- d. Familial dysautonomia

**7-27.** What diagnostic test should be performed either prior to pregnancy or early in prenatal care to assess the risk to the fetus and to the pregnancy from the disease that is typified by the blood smear shown in the image?



Reproduced, with permission, from Benz EJ: In Fauci AS, Braunwald E, Kasper DL (eds). Harrison's Principles of Internal Medicine, 17th ed. New York, McGraw-Hill, 2008. Figure 99-4.

- a. Serum ferritin
- b. Antiglobulin test
- c. Hemoglobin electrophoresis
- d. Platelet-associated immunoglobulin G

**7-28.** In women with the disease associated with this rash, goals of preconceptional counseling include all **EXCEPT** which of the following?



Reproduced, with permission, from Wolff K, Johnson RA: Fitzpatrick's Color Atlas and Synopsis of Clinical Dermatology, 6th ed. New York, McGraw-Hill, 2009. Figure 14-20.

- a. Optimizing medication to control disease
- b. Changing medications to reduce fetal risks
- c. Counseling patient on risks during pregnancy
- d. Convincing patient to undergo permanent sterilization

## CHAPTER 7 ANSWER KEY

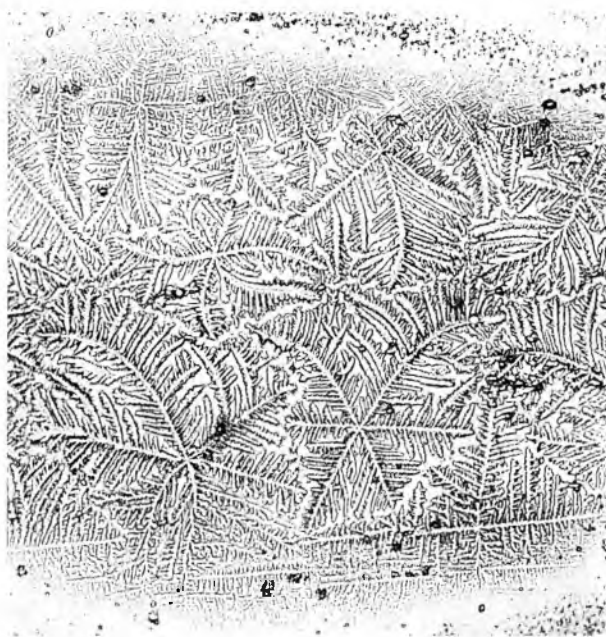
| Question number | Letter answer | Page cited | Header cited        | Question number | Letter answer | Page cited | Header cited                   |
|-----------------|---------------|------------|---------------------|-----------------|---------------|------------|--------------------------------|
| 7-1             | c             | p. 175     | Table 7-1           | 7-15            | b             | p. 179     | Table 7-5                      |
| 7-2             | c             | p. 174     | Unplanned Pregnancy | 7-16            | d             | p. 180     | Reproductive History           |
| 7-3             | b             | p. 176     | Table 7-2           | 7-17            | c             | p. 182     | Recreational Drugs and Smoking |
| 7-4             | c             | p. 175     | Figure 7-1          | 7-18            | d             | p. 182     | Diet                           |
| 7-5             | c             | p. 177     | Epilepsy            | 7-19            | c             | p. 182     | Domestic Abuse                 |
| 7-6             | b             | p. 177     | Table 7-3           | 7-20            | c             | p. 183     | Figure 7-3                     |
| 7-7             | b             | p. 177     | Neural-tube Defects | 7-21            | a             | p. 182     | Environmental Exposures        |
| 7-8             | d             | p. 177     | Neural-tube Defects | 7-22            | b             | p. 183     | Immunizations                  |
| 7-9             | c             | p. 177     | Phenylketonuria     | 7-23            | d             | p. 174     | Introduction                   |
| 7-10            | b             | p. 178     | Table 7-4           | 7-24            | c             | p. 182     | Diet                           |
| 7-11            | c             | p. 178     | Thalassemias        | 7-25            | d             | p. 177     | Neural-tube Defects            |
| 7-12            | c             | p. 179     | Table 7-5           | 7-26            | c             | p. 179     | Table 7-5                      |
| 7-13            | d             | p. 178     | Tay-Sachs Disease   | 7-27            | c             | p. 184     | Screening Tests                |
| 7-14            | a             | p. 179     | Tay-Sachs Disease   | 7-28            | d             | p. 185     | Table 7-6                      |

## CHAPTER 8

# Prenatal Care

- 8-1. Which of the following statements regarding prenatal care is **FALSE**?
- Historically, increased access to prenatal care has decreased maternal mortality rates.
  - It has become one of the most frequently used health services in the United States.
  - Since the 1990s, the largest gains in prenatal care access have been among minorities.
  - Although a number of medical complications are identifiable during prenatal care, most are not treatable.
- 8-2. Of the following, which is included in the *Kessner Index* to assess prenatal care adequacy?
- Preterm birth rate
  - Perinatal mortality rate
  - Number of prenatal care visits
  - Quality of prenatal care delivered
- 8-3. What is the most commonly cited reason for delaying enrollment into prenatal care?
- Lack of transportation
  - Inability to obtain an appointment
  - Late identification of pregnancy by the patient
  - Financial concerns

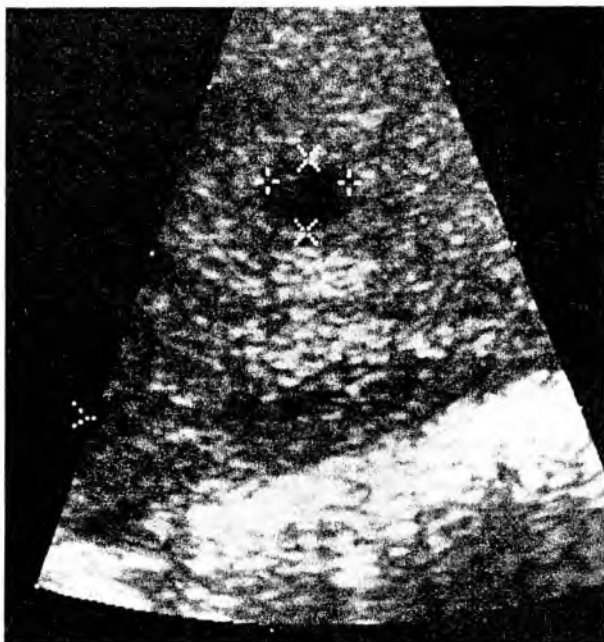
- 8-4. A dried cervical mucus specimen examined microscopically reveals the following pattern. Which of the following statements are true in this setting?



Reproduced, with permission, from Schorge JO, Schaffer JI, Halvorson LM, et al (eds): *Williams Gynecology*. New York, McGraw-Hill, 2008, Figure 19-9.

- Identification of this pattern makes early pregnancy unlikely.
- This pattern is seen when there is an increase in the concentration of estrogen relative to progesterone.
- An increased concentration of sodium chloride is necessary for mucus crystallization.
- All of the above

- 8-5. In general, what is the earliest point in pregnancy that a woman will begin to perceive fetal movements?
- 12 weeks
  - 16 weeks
  - 20 weeks
  - 24 weeks
- 8-6. Human chorionic gonadotropin (hCG) has an alpha subunit that is structurally identical to which other hormone?
- Luteinizing hormone (LH)
  - Thyroid-stimulating hormone (TSH)
  - Follicle-stimulating hormone (FSH)
  - All of the above
- 8-7. Identification of the following using abdominal sonography in early pregnancy reflects approximately what gestational age in a normally developing pregnancy?



Reproduced, with permission, from Cunningham FG, Leveno KJ, Bloom SL, et al: Williams Obstetrics, 23rd ed. New York, McGraw-Hill, 2010.

- 3 weeks
- 5 weeks
- 7 weeks
- 9 weeks

- 8-8. Estimating the expected date of delivery by adding 7 days to the date of the first day of the last menstrual period and then counting back by 3 months is known as which of the following?
- Naegele rule
  - Chadwick rule
  - Hegar rule
  - McRobert rule
- 8-9. Maternal smoking increases the risk for all EXCEPT which of the following adverse perinatal outcomes?
- Preterm birth
  - Placental abruption
  - Preeclampsia
  - Spontaneous abortion
- 8-10. In the image of a cervix, given here, which of the following is true regarding the round, yellow area located to the left of the cervical os?



- It is caused by *Chlamydia trachomatis* infection.
  - It should be biopsied to exclude invasive cancer.
  - It represents an occluded cervical gland.
  - It has been associated with preterm labor.
- 8-11. Which of the following statements is accurate regarding fundal height measurement?
- It is an accurate estimate of gestational age between 20 to 34 weeks
  - The maternal bladder should be emptied prior to measurement
  - Maternal obesity may distort measurement accuracy
  - All of the above

- 8-12.** According to the Institute of Medicine, what is the recommended weight gain for a woman with a normal prepregnancy body mass index?
- Less than 15 pounds
  - 15 to 25 pounds
  - 25 to 35 pounds
  - Greater than 35 pounds
- 8-13.** In general, women with lower maternal weight gains during pregnancy are at increased risk for which outcomes?
- Small-for-gestational age infant
  - Gestational diabetes
  - Preeclampsia
  - Cesarean delivery
- 8-14.** Which of the following is true regarding weight retention after pregnancy?
- Most maternal weight loss is at the time of delivery.
  - Average weight retention beyond 6 months postpartum is 15 pounds.
  - The more weight that is gained during the pregnancy, the less that is lost postpartum.
  - A higher prepregnancy body mass index usually results in greater weight retention.
- 8-15.** Excessive supplementation with which of the following is of particular concern as it may be teratogenic?
- Vitamin C
  - Vitamin B<sub>6</sub>
  - Vitamin A
  - Vitamin E
- 8-16.** What is the recommended increase in daily caloric intake during pregnancy?
- 50 kcal
  - 300 kcal
  - 500 kcal
  - 700 kcal
- 8-17.** What is the minimal daily dose of elemental iron taken throughout the latter half of pregnancy to sufficiently meet the requirements of the mother and her fetus?
- 15 mg
  - 30 mg
  - 50 mg
  - 125 mg
- 8-18.** Women with a prior child with a neural-tube defect who take 4 mg of folic acid periconceptionally can reduce the risk for recurrence by approximately which of the following?
- 15%
  - 50%
  - 70%
  - 90%
- 8-19.** Which of the following outcomes have been associated with physically demanding work in pregnancy?
- Preterm birth
  - Gestational hypertension
  - Fetal-growth restriction
  - All of the above
- 8-20.** Which of the following conditions occurring in the third trimester would be considered an absolute contraindication to exercise in pregnancy?
- Placenta previa
  - Asthma
  - Gestational diabetes
  - Twin gestation
- 8-21.** Which of the following types of fish should not be eaten by pregnant women due to its excessively high mercury levels?
- Tuna
  - Salmon
  - Mackerel
  - Catfish
- 8-22.** Pregnant women may safely fly until what gestational age?
- 20 weeks
  - 30 weeks
  - 36 weeks
  - It is not safe to fly during pregnancy
- 8-23.** Which of the following statements is accurate regarding sexual activity during pregnancy?
- Coitus should be avoided after 28 weeks because it has been associated with preterm labor.
  - The decrease in frequency of coitus as gestation advances is usually due to decreased desire.
  - Coitus should be encouraged at term since it has been demonstrated to prompt entry into labor.
  - All of the above

**8-24.** Which of the following vaccinations are contraindicated in pregnancy?

- a. Varicella
- b. Influenza
- c. Pneumococcus
- d. Hepatitis B

**8-25.** Practical recommendations regarding caffeine consumption in the form of coffee during pregnancy should be to consume no more than which of the following?

- a. One 5-ounce cup per day
- b. Three 5-ounce cups per day
- c. Five 5-ounce cups per day
- d. Coffee should be avoided in pregnancy.

## CHAPTER 8 ANSWER KEY

| Question number | Letter answer | Page cited | Header cited                        | Question number | Letter answer | Page cited | Header cited    |
|-----------------|---------------|------------|-------------------------------------|-----------------|---------------|------------|-----------------|
| 8-1             | d             | p. 189     | Overview                            | 8-14            | a             | p. 202     | Nutrition       |
| 8-2             | c             | p. 189     | Assessing Adequacy of Prenatal Care | 8-15            | c             | p. 202     | Nutrition       |
| 8-3             | c             | p. 190     | Assessing Adequacy of Prenatal Care | 8-16            | b             | p. 202     | Nutrition       |
| 8-4             | d             | p. 191     | Diagnosis of Pregnancy              | 8-17            | b             | p. 203     | Nutrition       |
| 8-5             | b             | p. 192     | Diagnosis of Pregnancy              | 8-18            | c             | p. 205     | Nutrition       |
| 8-6             | d             | p. 192     | Diagnosis of Pregnancy              | 8-19            | d             | p. 206     | Common Concerns |
| 8-7             | b             | p. 193     | Diagnosis of Pregnancy              | 8-20            | a             | p. 206     | Common Concerns |
| 8-8             | a             | p. 195     | Initial Prenatal Evaluation         | 8-21            | c             | p. 206     | Common Concerns |
| 8-9             | c             | p. 195     | Initial Prenatal Evaluation         | 8-22            | c             | p. 207     | Common Concerns |
| 8-10            | c             | p. 197     | Initial Prenatal Evaluation         | 8-23            | b             | p. 207     | Common Concerns |
| 8-11            | d             | p. 199     | Initial Prenatal Evaluation         | 8-24            | a             | p. 208     | Common Concerns |
| 8-12            | c             | p. 201     | Nutrition                           | 8-25            | b             | p. 210     | Caffeine        |
| 8-13            | a             | p. 201     | Nutrition                           |                 |               |            |                 |



## CHAPTER 9

# Abortion

- 9-1.** Which of the following gestational ages and weights are typically used to define abortion?
- Less than 12 weeks, less than 100 g
  - Less than 12 weeks, less than 250 g
  - Less than 16 weeks, less than 500 g
  - Less than 20 weeks, less than 500 g
- 9-2.** Which of the following is the most common cause of first-trimester pregnancy loss?
- Uterine anomalies
  - Incompetent cervix
  - Intrauterine infection
  - Fetal chromosomal anomalies
- 9-3.** Of fetal chromosomal anomalies, which is most commonly associated with first-trimester pregnancy loss?
- Trisomy
  - Triploidy
  - Monosomy X
  - None of the above
- 9-4.** Which of the following maternal factors is most commonly associated with first-trimester pregnancy loss?
- Maternal age
  - Incompetent cervix
  - Intrauterine infection
  - Hyperemesis gravidarum
- 9-5.** Classically, cervical incompetence is characterized by delivery in the second trimester preceded by which of the following?
- Fever
  - Heavy bleeding
  - Painless dilatation
  - Painful contractions
- 9-6.** Contraindications to cerclage placement usually include which of the following?
- Rupture of membranes
  - Advanced maternal age
  - Prior cervical conization
  - Maternal diabetes mellitus
- 9-7.** Ideally, when should prophylactic cerclage placement be performed?
- Preconceptionally
  - At 6 to 12 weeks' gestation
  - At 12 to 16 weeks' gestation
  - At the first sign of cervical dilatation
- 9-8.** Which of the following is the preferred initial method for treatment of cervical incompetence?
- McDonald cerclage
  - Transabdominal cerclage
  - Modified Shirodkar cerclage
  - Preconceptional Lash procedure
- 9-9.** Intrauterine infection in patients with a McDonald cerclage is managed most appropriately with IV antibiotics and which of the following?
- Observation
  - Tocolytic administration
  - Cerclage removal and observation
  - Cerclage removal and labor induction

9-10. A 24-year-old G3P0A2 presents with 8 weeks of amenorrhea and vaginal bleeding. Her serum  $\beta$ -hCG level is 68,000 mIU/mL, and her internal cervical os is closed. The sonographic uterine findings are shown below, and fetal heart motion is noted. Normal adnexal anatomy is seen. Your diagnosis is which of the following?



- a. Missed abortion
- b. Threatened abortion
- c. Incomplete abortion
- d. Cervical ectopic pregnancy

9-11. Effective prevention of miscarriage in women with threatened abortion includes which of the following?

- a. Bedrest
- b. McDonald cerclage
- c. Progesterone vaginal suppositories
- d. None of the above

9-12. Anti-D immunoglobulin should be given to Rh negative women in all EXCEPT which of the following settings?

- a. Threatened abortion
- b. After salpingectomy for ectopic pregnancy
- c. After evacuation of complete hydatidiform mole
- d. After first-trimester elective pregnancy termination

9-13. Your patient with a pregnancy at 16 weeks' gestation presents with fever ( $38.5^{\circ}\text{C}$ ) and lower abdominal pain, but without bleeding. She describes a small leakage of vaginal fluid yesterday. Membrane rupture is confirmed, and appropriate primary management includes IV antibiotics and which of the following?

- a. Labor induction
- b. Bedrest and observation
- c. Tocolytic administration
- d. Hysterotomy and evacuation

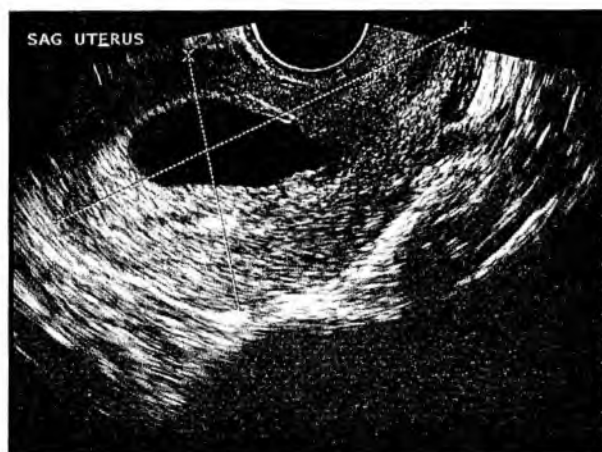
9-14. An 18-year-old G1P0 presents with 12 weeks of amenorrhea and heavy vaginal bleeding. Her serum  $\beta$ -hCG level is 15,000 mIU/mL. Tissue is seen through an open cervical os. Your diagnosis and management plan include which of the following?

- a. Incomplete abortion, plan dilatation and curettage (D&C)
- b. Threatened abortion, plan bedrest
- c. Ectopic tubal pregnancy, plan laparoscopic resection
- d. Completed abortion, plan subsequent  $\beta$ -hCG testing in 48 hours

9-15. Incomplete abortion may be treated successfully with which of the following?

- a. D&C
- b. Observation
- c. Prostaglandin  $\text{E}_1$  administration
- d. All of the above

9-16. A 40-year-old G3 P2 presents with 10 weeks of amenorrhea. Her serum  $\beta$ -hCG level is 25,000 mIU/mL, and her internal cervical os is closed. The following uterine sonographic findings are noted. Normal adnexal anatomy is seen. Your diagnosis is which of the following?



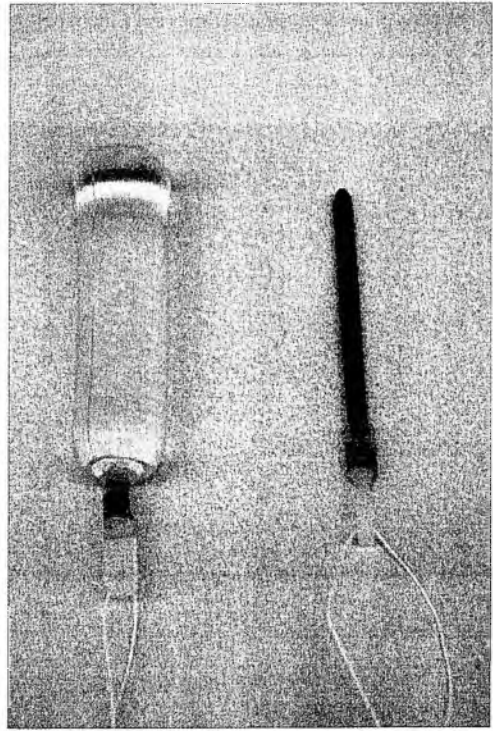
- a. Missed abortion
- b. Completed abortion
- c. Ampullary tubal pregnancy
- d. Complete hydatidiform mole

9-17. Missed abortion may be treated successfully with which of the following?

- a. D&C
- b. Observation
- c. Prostaglandin  $\text{E}_1$  administration
- d. All of the above

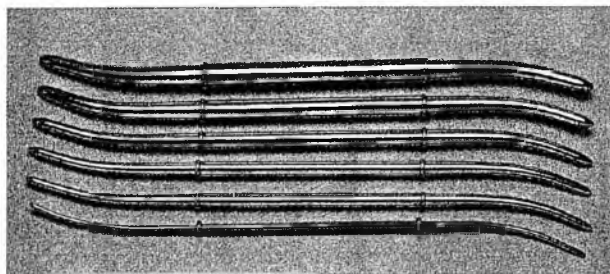
- 9-18. For the treatment of septic abortion, adequate antibiotic coverage includes which of the following?
- Gram positive
  - Gram negative
  - Broad-spectrum
  - Anaerobic, gram positive
- 9-19. Which of the following have been associated with higher rates of recurrent miscarriage?
- Septate uterus
  - Anticardiolipin antibodies
  - Parental chromosomal anomalies
  - All of the above
- 9-20. Which of the following tests would be the most effective in identifying an underlying cause of recurrent miscarriage?
- Antithrombin III assay
  - Serum progesterone level
  - Lupus anticoagulant assay
  - Luteinizing hormone (LH) assay
- 9-21. Which of the following treatments lower miscarriage rates in women with a diagnosed cause of recurrent miscarriage?
- Aspirin plus heparin for factor V Leiden mutation
  - Aspirin plus heparin for antiphospholipid syndrome
  - Paternal-cell immunization for alloimmune rejection
  - Laparoscopic resection of a 4-cm intramural leiomyoma
- 9-22. In most cases of elective pregnancy termination, medical regimens offer all **EXCEPT** which of the following advantages compared with surgical techniques?
- High success rate
  - Requires one visit
  - Avoids anesthesia
  - Avoids invasive procedure
- 9-23. Which of the following may lower complications associated with D&C?
- Postoperative oral antibiotics
  - Preoperative cervical laminaria
  - Preoperative bimanual examination
  - All of the above

- 9-24. The primary goal of the device shown in the image here is which of the following?



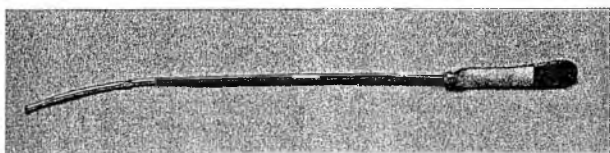
- Gradually dilate the cervix
  - Stimulate forceful contractions
  - Minimize intraoperative bleeding
  - Lower rates of postoperative hematometra
- 9-25. You place laminaria in preparation for pregnancy termination at 16 week' gestation. The next day your patient chooses **NOT** to proceed with the abortion. You remove the laminaria and counsel her which of the following?
- Observation is recommended.
  - Abortion will spontaneously occur in most cases.
  - Oral antimicrobials are required to prevent infection.
  - Cerclage placement is required to sustain the pregnancy.

- 9-26. Complications caused by the type of instrument shown in the image below during D&C can be minimized by which of the following?



Reproduced, with permission, from Schorge JO, Schaffer JI, Halvorson LM, et al (eds): Williams Gynecology. New York, McGraw-Hill, 2008, Figure 41-17.4.

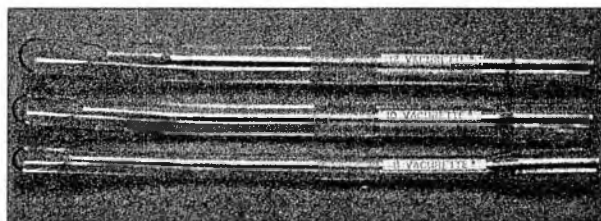
- a. Preoperative bimanual examination
  - b. Grasp instrument firmly with palm and all five fingers
  - c. Begin with largest diameter and then use sequentially smaller diameters
  - d. All of the above
- 9-27. During D&C, if the uterine fundus is perforated with the instrument shown in the image below, which of the following is the most appropriate primary management?



Reproduced, with permission, from Schorge JO, Schaffer JI, Halvorson LM, et al (eds): Williams Gynecology. New York, McGraw-Hill, 2008, Figure 41-16.1.

- a. Observation
- b. Hysterectomy
- c. Uterine artery embolization
- d. Laparoscopy to evaluate for injuries

- 9-28. During D&C, if the uterine fundus is perforated with one of the instruments shown in the image below, which of the following is the most appropriate primary management?



Reproduced, with permission, from Schorge JO, Schaffer JI, Halvorson LM, et al (eds): Williams Gynecology. New York, McGraw-Hill, 2008, Figure 41-16.2.

- a. Observation
  - b. Hysterectomy
  - c. Uterine artery embolization
  - d. Laparoscopy to evaluate for injuries
- 9-29. Effective and safe combinations used for pregnancy termination include all EXCEPT which of the following?
- a. Misoprostol alone
  - b. Mifepristone and misoprostol
  - c. Methotrexate and misoprostol
  - d. Mifepristone and methotrexate
- 9-30. The American College of Obstetricians and Gynecologists supports outpatient medical abortion as an acceptable alternative to surgical abortion for pregnancies less than how many weeks?
- a. 5
  - b. 7
  - c. 9
  - d. 11
- 9-31. Contraindications to medical abortion include which of the following?
- a. Septate uterus
  - b. Severe anemia
  - c. Cervical dysplasia
  - d. Type 2 diabetes mellitus
- 9-32. Accepted options for second-trimester abortion include all EXCEPT which of the following?
- a. D&E
  - b. Oxytocin
  - c. Indomethacin
  - d. Prostaglandin E<sub>2</sub>

- 9-33.** Common side effects of prostaglandin  $E_2$  include which of the following?
- a.** Fever
  - b.** Dysuria
  - c.** Arthralgias
  - d.** Somnolence
- 9-34.** Postoperatively, elective abortion is associated with subsequent increased rates of which of the following?
- a.** Infertility
  - b.** Ectopic pregnancy
  - c.** First-trimester pregnancy loss
  - d.** None of the above

## CHAPTER 9 ANSWER KEY

| Question number | Letter answer | Page cited | Header cited             | Question number | Letter answer | Page cited | Header cited                           |
|-----------------|---------------|------------|--------------------------|-----------------|---------------|------------|----------------------------------------|
| 9-1             | d             | p. 215     | Introduction             | 9-19            | d             | p. 224     | Recurrent Miscarriage                  |
| 9-2             | d             | p. 215     | Spontaneous Abortion     | 9-20            | c             | p. 224     | Recurrent Miscarriage                  |
| 9-3             | a             | p. 216     | Table 9-1                | 9-21            | b             | p. 224     | Recurrent Miscarriage                  |
| 9-4             | a             | p. 217     | Maternal Factors         | 9-22            | b             | p. 228     | Table 9-4                              |
| 9-5             | c             | p. 218     | Incompetent Cervix       | 9-23            | d             | p. 228     | Dilatation and Curettage               |
| 9-6             | a             | p. 219     | Evaluation and Treatment | 9-24            | a             | p. 229     | Hygroscopic Dilators                   |
| 9-7             | c             | p. 219     | Evaluation and Treatment | 9-25            | a             | p. 229     | Hygroscopic Dilators                   |
| 9-8             | a             | p. 219     | Cerclage Procedures      | 9-26            | a             | p. 229     | Technique for Dilatation and Curettage |
| 9-9             | d             | p. 219     | Complications            | 9-27            | a             | p. 230     | Complications                          |
| 9-10            | b             | p. 220     | Threatened Abortion      | 9-28            | d             | p. 230     | Complications                          |
| 9-11            | d             | p. 220     | Threatened Abortion      | 9-29            | d             | p. 232     | Table 9-5                              |
| 9-12            | a             | p. 221     | Anti-D Immunoglobulin    | 9-30            | b             | p. 232     | Medical Abortion                       |
| 9-13            | a             | p. 222     | Inevitable Abortion      | 9-31            | b             | p. 232     | Medical Abortion                       |
| 9-14            | a             | p. 222     | Incomplete Abortion      | 9-32            | c             | p. 233     | Second-trimester Abortion              |
| 9-15            | d             | p. 222     | Incomplete Abortion      | 9-33            | a             | p. 233     | Prostaglandin E2                       |
| 9-16            | a             | p. 222     | Missed Abortion          | 9-34            | d             | p. 233     | Impact on Future Pregnancies           |
| 9-17            | d             | p. 222     | Missed Abortion          |                 |               |            |                                        |
| 9-18            | c             | p. 222     | Septic Abortion          |                 |               |            |                                        |

## CHAPTER 10

# Ectopic Pregnancy

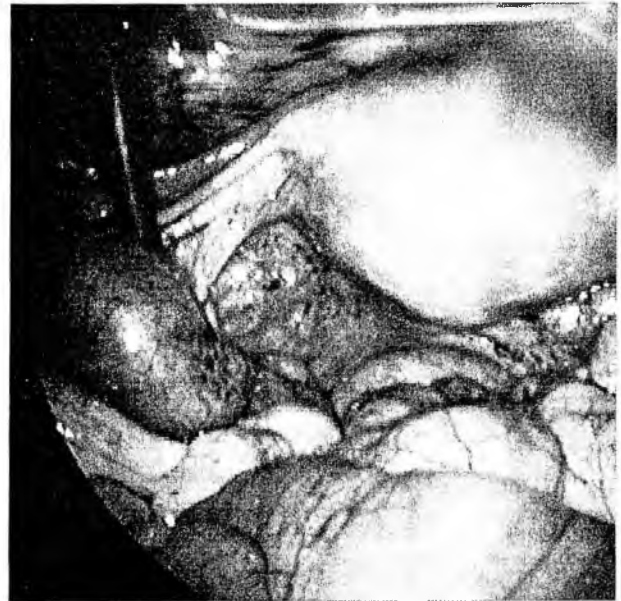
- 10-1.** Which of the following most accurately defines ectopic pregnancy?
- Implantation within the fallopian tube
  - Implantation outside the uterine cavity
  - Abnormally rising maternal serum  $\beta$ -hCG level
  - Abnormally rising maternal serum progesterone level
- 10-2.** What is the most common site of tubal pregnancy implantation?
- Cornua
  - Fimbria
  - Isthmus
  - Ampulla
- 10-3.** Ectopic pregnancy may be found in which of following sites?
- Ovary
  - Broad ligament
  - Posterior cul-de-sac
  - All of the above
- 10-4.** The image below depicts which type of ectopic pregnancy?



Photograph contributed by Dr. Jennifer Muller.

- Isthmic
- Fimbrial
- Interstitial
- Ampullary

- 10-5.** The image below depicts which type of ectopic pregnancy?



Reproduced, with permission, from Schorge JO, Schaffer JI, Halvorson LM, et al (eds): *Williams Gynecology*. New York, McGraw-Hill, 2008, Figure 7-9.

- Isthmic
- Ovarian
- Interstitial
- Ampullary

- 10-6. The image below depicts which type of ectopic pregnancy?



- a. Isthmic
  - b. Cervical
  - c. Interstitial
  - d. Cesarean scar
- 10-7. The image below of a bisected uterus depicts which type of ectopic pregnancy?



Photograph contributed by Dr. David Rahn.

- a. Isthmic
  - b. Cervical
  - c. Interstitial
  - d. Cesarean scar
- 10-8. Which of the following is **LEAST** likely to increase the risk for ectopic pregnancy?
- a. Prior pelvic infection
  - b. Prior ectopic pregnancy
  - c. Prior hydatidiform mole
  - d. Current assisted reproductive technology use

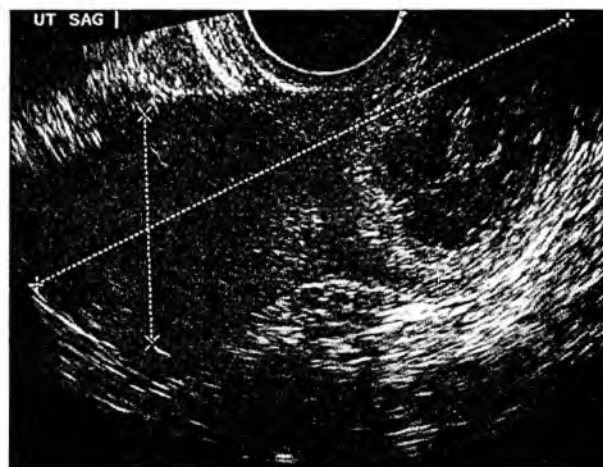
- 10-9. With contraceptive failure, which method has a relative increased risk of ectopic pregnancy?
- a. Condoms
  - b. Vasectomy
  - c. Tubal sterilization
  - d. All of the above
- 10-10. Which of the following are potential clinical outcomes of tubal pregnancy?
- a. Tubal rupture
  - b. Tubal abortion
  - c. Pregnancy resorption
  - d. All of the above
- 10-11. Which is the preferred treatment of an interstitial ectopic pregnancy?
- a. Suction D&C
  - b. Hysterectomy
  - c. Cornual resection
  - d. Hysteroscopic excision
- 10-12. Which of the following defines heterotopic pregnancy?
- a. One tubal and one abdominal pregnancy
  - b. One ectopic and one intrauterine pregnancy
  - c. Two pregnancies, one in each fallopian tube
  - d. Two ectopic pregnancies in one fallopian tube
- 10-13. Which of the following is associated with an increased incidence of heterotopic pregnancy?
- a. Obesity
  - b. Multiparity
  - c. Prior cesarean delivery
  - d. Assisted reproductive technologies
- 10-14. Which of the following findings most strongly indicates a sizable intra-abdominal hemorrhage?
- a. Shoulder pain
  - b. Nausea and vomiting
  - c. Heavy vaginal bleeding
  - d. Unilateral lower abdominal pain
- 10-15. Which of the following approximate first-trimester progesterone levels (ng/mL) suggest a normally developing pregnancy?
- a. <5
  - b. 10
  - c. 15
  - d. 30



- 10-16.** Findings of a positive pregnancy test result and first-trimester serum progesterone level  $<5$  ng/mL strongly suggest which of the following?
- Viable twin gestation
  - Nonviable pregnancy
  - Viable intrauterine pregnancy
  - Physiologic corpus luteum decline
- 10-17.** In early pregnancy, a sonographic intrauterine fluid collection may represent which of the following?
- Decidual cyst
  - Gestational sac
  - Pseudogestational sac
  - All of the above
- 10-18.** Which of the following sonographic adnexal finding is most suggestive of ectopic pregnancy?
- Tubal halo
  - Ring of fire
  - Ovarian cyst
  - Extrauterine yolk sac
- 10-19.** Above what serum  $\beta$ -hCG level (mIU/mL) can intrauterine gestations reliably be detected using transvaginal sonography?
- 500
  - 800
  - 1,000
  - 1,500
- 10-20.** What is the mean doubling time for  $\beta$ -hCG levels with an early normal intrauterine pregnancy?
- 24 hours
  - 48 hours
  - 72 hours
  - 96 hours
- 10-21.** What is the lowest percent increase for  $\beta$ -hCG levels in early normal intrauterine pregnancies during a 48-hour interval?
- 15–25
  - 35–45
  - 55–65
  - 75–85
- 10-22.** In which surgical approach is the tube opened to remove the gestational products, then left unsutured?
- Salpingotomy
  - Salpingostomy
  - Salpingectomy
  - Salpingorrhaphy
- 10-23.** Persistent trophoblast following surgical treatment of ectopic pregnancy is unlikely if the serum  $\beta$ -hCG level falls by what percentage on postoperative day 1?
- 10
  - 25
  - 50
  - 100
- 10-24.** Contraindications for methotrexate therapy include all **EXCEPT** which of the following?
- Diabetes
  - Breast feeding
  - Thrombocytopenia
  - Intra-abdominal hemorrhage
- 10-25.** Which of the following would be most closely associated with failure of methotrexate therapy to treat ectopic pregnancy?
- Increased parity
  - Ectopic size of 2.5 cm
  - Prior ectopic pregnancy
  - Serum  $\beta$ -hCG level of 7,500 mIU/mL
- 10-26.** In most instances, methotrexate for treatment of ectopic pregnancy is administered by which route and at what dose?
- Orally, 100 mg/m<sup>2</sup>
  - Intravaginally, 100 mg/m<sup>2</sup>
  - Intramuscularly, 50 mg/m<sup>2</sup>
  - Subcutaneously, 50 mg/m<sup>2</sup>
- 10-27.** Which of the following is **NOT** an expected possible complication of methotrexate therapy for ectopic pregnancy?
- Stomatitis
  - Liver toxicity
  - Gastroenteritis
  - Cardiac arrhythmia
- 10-28.** Which of the following may lower methotrexate therapy efficacy for ectopic pregnancy treatment?
- Alcohol
  - Caffeine
  - Folic acid
  - All of the above
- 10-29.** Methotrexate may be administered in which of the following regimens?
- Two doses
  - Single dose
  - Variable doses
  - All of the above

- 10-30. Following treatment with single-dose methotrexate therapy for ectopic pregnancy, serum levels of  $\beta$ -hCG should decrease by what percentage between days 4 and 7?
- 15
  - 25
  - 33
  - 50
- 10-31. Of physical examination findings with abdominal pregnancy, which of the following is more common?
- Cervical deviation
  - Uterine dextrorotation
  - Large theca luteal cysts
  - Round ligament tenderness
- 10-32. Which of the following is the most common life-threatening complication associated with abdominal pregnancy?
- Sepsis
  - Aspiration
  - Hemorrhage
  - Preeclampsia
- 10-33. What is the most commonly used approach to an abdominal pregnancy at 16 weeks' gestation?
- Intragastric sac methotrexate
  - Laparotomy with delivery of the fetus
  - Expectant management until fetal viability
  - Uterine artery embolization, then await fetal and placental resorption
- 10-34. An ectopic pregnancy implanted in the ovary clinically may most closely mimic which of the following?
- Ovarian torsion
  - Corpus luteum cyst rupture
  - Uterine horn pregnancy rupture
  - Interstitial ectopic pregnancy rupture
- 10-35. Which of the following is an appropriate treatment of ovarian ectopic pregnancy?
- Cystectomy
  - Oophorectomy
  - Ovarian wedge resection
  - All of the above
- 10-36. Which of the following most significantly increases the risk of cervical pregnancy?
- In vitro fertilization
  - Advanced maternal age
  - Increased cesarean delivery rate
  - Increased incidence of cervical neoplasia

- 10-37. What is the preferred treatment for a cervical pregnancy in a stable patient?
- Methotrexate
  - Hysterectomy
  - Cerclage followed by D&C
  - Uterine artery embolization
- 10-38. As shown by the sonogram image below, which of the following is **NOT** one of the sonographic criteria for cervical pregnancy?



Reproduced, with permission, from Cunningham FG, Leveno KL, Bloom SL, et al: Williams Obstetrics, 22nd ed. New York, McGraw-Hill, 2006. <http://www.accessmedicine.com>. Figure 1.

- Hourglass uterine shape
  - Ballooned cervical canal
  - Anterior uterine isthmic mass
  - Hyperechoic thin endometrial stripe
- 10-39. Which of the following is **NOT** one of the sonographic criteria for Cesarean scar pregnancy?
- Empty cervical canal
  - Hourglass uterine shape
  - Anterior uterine isthmic mass
  - Hyperechoic thin endometrial stripe
- 10-40. Which of the following may be appropriate to treat Cesarean scar pregnancy in a stable patient?
- Methotrexate
  - Hysterectomy
  - Anterior uterine isthmus resection
  - All of the above

## CHAPTER 10 ANSWER KEY

| Question number | Letter answer | Page cited | Header cited                          |
|-----------------|---------------|------------|---------------------------------------|
| 10-1            | b             | p. 238     | Introduction                          |
| 10-2            | d             | p. 238     | Classification                        |
| 10-3            | d             | p. 239     | Figure 10-1                           |
| 10-4            | c             | p. 239     | Figure 10-1                           |
| 10-5            | d             | p. 239     | Figure 10-1                           |
| 10-6            | d             | p. 239     | Figure 10-1                           |
| 10-7            | b             | p. 239     | Figure 10-1                           |
| 10-8            | c             | p. 238     | Risk Factors                          |
| 10-9            | c             | p. 238     | Failed Contraception                  |
| 10-10           | d             | p. 240     | Tubal Pregnancy                       |
| 10-11           | c             | p. 241     | Interstitial and Cornual Pregnancy    |
| 10-12           | b             | p. 241     | Heterotopic Ectopic Pregnancy         |
| 10-13           | d             | p. 241     | Heterotopic Ectopic Pregnancy         |
| 10-14           | a             | p. 241     | Clinical Manifestations               |
| 10-15           | d             | p. 242     | Human Chorionic Gonadotropin          |
| 10-16           | b             | p. 242     | Serum Progesterone                    |
| 10-17           | d             | p. 243     | Endometrial Cavity                    |
| 10-18           | d             | p. 243     | Adnexa                                |
| 10-19           | d             | p. 244     | Nondiagnostic Transvaginal Sonography |
| 10-20           | b             | p. 245     | Nondiagnostic Transvaginal Sonography |

| Question number | Letter answer | Page cited | Header cited                          |
|-----------------|---------------|------------|---------------------------------------|
| 10-21           | c             | p. 245     | Nondiagnostic Transvaginal Sonography |
| 10-22           | b             | p. 246     | Salpingostomy                         |
| 10-23           | c             | p. 247     | Persistent Trophoblast                |
| 10-24           | a             | p. 247     | Medical Management with Methotrexate  |
| 10-25           | d             | p. 247     | Patient Selection                     |
| 10-26           | c             | p. 247     | Dose, Administration, and Toxicity    |
| 10-27           | d             | p. 247     | Dose, Administration, and Toxicity    |
| 10-28           | c             | p. 247     | Dose, Administration, and Toxicity    |
| 10-29           | d             | p. 248     | Table 10-3                            |
| 10-30           | a             | p. 248     | Table 10-3                            |
| 10-31           | a             | p. 250     | Diagnosis                             |
| 10-32           | c             | p. 250     | Management                            |
| 10-33           | b             | p. 250     | Management                            |
| 10-34           | b             | p. 251     | Diagnosis                             |
| 10-35           | d             | p. 251     | Management                            |
| 10-36           | a             | p. 251     | Cervical Pregnancy                    |
| 10-37           | a             | p. 252     | Medical Management                    |
| 10-38           | c             | p. 252     | Figure 10-12                          |
| 10-39           | b             | p. 253     | Figure 10-13                          |
| 10-40           | d             | p. 252     | Diagnosis and Management              |

## CHAPTER 11

# Gestational Trophoblastic Disease

11-1. Gestational trophoblastic neoplasia includes all **EXCEPT** which of the following?

- a. Invasive mole
- b. Choriocarcinoma
- c. Partial hydatidiform mole
- d. Placental site trophoblastic tumor

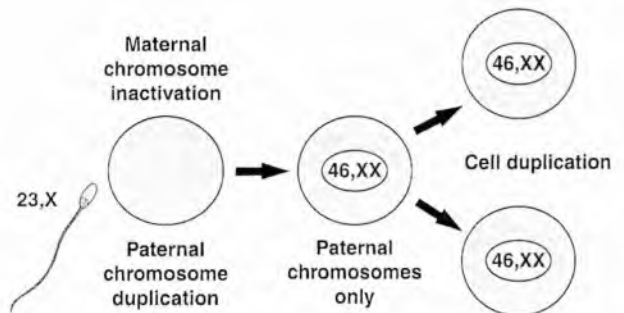
11-2. Which of the following histological changes, as shown here, are characteristic of molar pregnancy?



Contributed by Dr. Erika Fong.

- a. Chronic villitis and villous inclusion bodies
- b. Villous mesenchymal hyperplasia and acute villitis
- c. Villous lymphocytic infiltration and syncytial knots
- d. Trophoblastic proliferation and villous stromal edema

11-3. The pathogenesis of which of the following is shown in this figure?



Reproduced, with permission, from Schorge JO, Schaffer JI, Halvorson LM, et al (eds): Williams Gynecology. New York, McGraw-Hill, 2008, Figure 37-1 A.

- a. Partial mole
- b. Complete mole
- c. Mature cystic teratoma
- d. Complete mole with coexistent twin

11-4. In general, which of the following characteristics is **NOT** true for the type of molar pregnancy shown in this photograph?

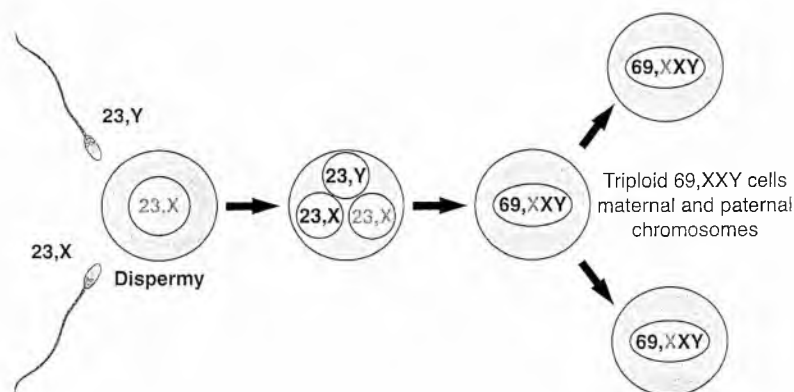


Reproduced, with permission, from Schorge JO, Schaffer JI, Halvorson LM, et al (eds): Williams Gynecology. New York, McGraw-Hill, 2008, Figure 37-3.

- a. Embryo is absent.
- b. Amnion is present.
- c. Diploid karyotype
- d. 15–20% risk for gestational trophoblastic neoplasia

11-5. The pathogenesis of which of the following is shown in this figure?

- a. Partial mole
- b. Complete mole
- c. Mature cystic teratoma
- d. Complete mole with coexistent twin

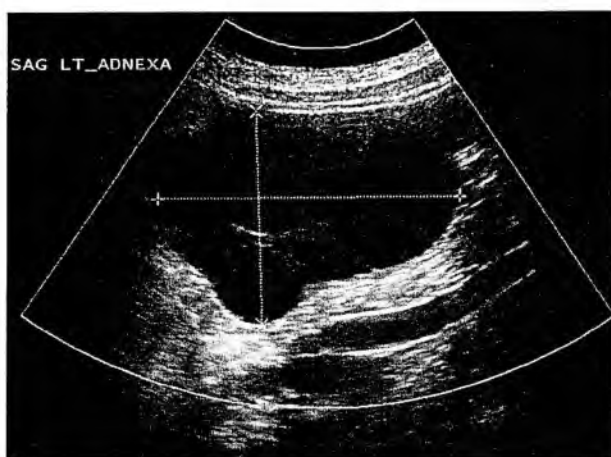


Reproduced, with permission, from Schorge JO, Schaffer JI, Halvorson LM, et al (eds): Williams Gynecology. New York, McGraw-Hill, 2008, Figure 37-1B.

11-6. Typically, the fetus of a partial molar pregnancy has which of the following characteristics?

- a. Growth restricted
- b. Structurally normal
- c. Lives to adolescence
- d. All of the above

11-7. This adnexal finding, which is frequently seen with complete molar pregnancy, is best managed by which of the following?



- a. Oophoropexy
- b. Oophorectomy
- c. Ovarian cystectomy
- d. Molar pregnancy evacuation

11-8. Bilateral ovarian theca-lutein cysts, in association with molar pregnancies, may portend a greater risk of which of the following?

- a. Deep-vein thrombosis
- b. Gestational hypertension
- c. Trophoblastic tissue embolization
- d. Gestational trophoblastic neoplasia

11-9. Risk factors for molar pregnancy include which of the following?

- a. Multiparity
- b. Type I diabetes mellitus
- c. Prior cesarean delivery
- d. Age less than 15 years

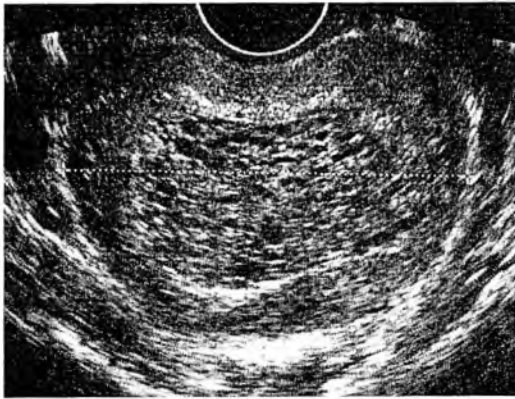
11-10. Compared with normal pregnancy, complete molar pregnancy in its classic presentation is associated with a greater incidence of all EXCEPT which of the following?

- a. Vaginal bleeding
- b. Low serum thyroid stimulating hormone (TSH) levels
- c. Low serum  $\beta$ -human chorionic gonadotropin ( $\beta$ -hCG) levels
- d. Uterine size greater than dates

11-11. Prior to molar pregnancy evacuation, a preoperative chest radiograph is typically obtained to exclude which of the following conditions associated with gestational trophoblastic disease?

- a. Cardiomegaly
- b. Pleural effusion
- c. Lung metastases
- d. Pulmonary edema

- 11-12.** What is the most appropriate management for the molar pregnancy shown here at 8 to 9 weeks' gestation?



- a. Observation
  - b. Suction dilation and curettage (D&C)
  - c. Hysterectomy
  - d. Hysterotomy and evacuation
- 11-13.** After evacuation of a molar pregnancy, patients are routinely monitored with which of the following?
- a. Serum TSH level
  - b. Chest radiography
  - c. Serum  $\beta$ -hCG level
  - d. Transvaginal sonography
- 11-14.** Following evacuation,  $\beta$ -hCG levels are measured within 48 hours, and then subsequent levels are checked at what frequency?
- a. Weekly
  - b. Monthly
  - c. Bimonthly
  - d. Biannually
- 11-15.** Gestational trophoblastic neoplasia may develop after which of the following?
- a. Evacuation of a partial mole
  - b. Delivery of a normal term pregnancy
  - c. Miscarriage of a genetically normal abortus
  - d. All of the above
- 11-16.** Criteria for the diagnosis of gestational trophoblastic neoplasia includes which of the following?
- a. Rising  $\beta$ -hCG levels
  - b. Plateaued  $\beta$ -hCG levels
  - c. Persistent  $\beta$ -hCG levels
  - d. All of the above
- 11-17.** Which of the following characteristics are most typical of an invasive mole?
- a. Follows a term pregnancy
  - b. Associated with widespread metastasis
  - c. Displays minimal trophoblastic growth
  - d. Penetrates deeply into the myometrium
- 11-18.** Metastatic disease, such as that shown in this computed tomography scan, is most commonly seen with which of the following?
- a. Invasive mole
  - b. Choriocarcinoma
  - c. Epithelioid trophoblastic tumor
  - d. Placental site trophoblastic tumor



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- 11-19.** Choriocarcinoma most commonly develops after which of the following?
- Evacuation of a partial mole
  - Evacuation of a complete mole
  - Delivery of a normal term pregnancy
  - Abortion of a genetically normal abortus
- 11-20.** Choriocarcinoma is spread by which of the following methods?
- Lymphatic
  - Hematogenous
  - Contiguous invasion
  - Disseminated via peritoneal fluid
- 11-21.** Which of the following is the most common site of choriocarcinoma metastasis?
- Lungs
  - Brain
  - Spleen
  - Breast
- 11-22.** The hallmark sign of gestational trophoblastic neoplasia is which of the following?
- Seizures
  - Hemoptysis
  - Uterine bleeding
  - Pelvic vein thrombosis
- 11-23.** Your patient presents with complaints of persistent, heavy, dark-brown vaginal bleeding 8 weeks after delivery of a term neonate. Initial management should include which of the following?
- Pelvic magnetic resonance imaging
  - Chest radiograph
  - Serum  $\beta$ -hCG level
  - Methotrexate administration
- 11-24.** According to the modified World Health Organization Prognostic Scoring System, the entire category of low-risk gestational trophoblastic neoplasia is represented by which range of scores?
- 0–2
  - 1–4
  - 0–6
  - 1–10
- 11-25.** Your patient is assigned an International Federation of Gynecology and Obstetrics (FIGO) score of 4 for choriocarcinoma. Preferred and effective treatment includes methotrexate **OR** which of the following?
- Radical hysterectomy
  - External beam pelvic radiation
  - EMA-CO combination chemotherapy
  - Actinomycin D single-agent chemotherapy
- 11-26.** Your patient has been assigned a FIGO score of 5 for choriocarcinoma and has received standard treatment. You counsel her that her chances for cure are closest to which of the following?
- 40%
  - 50%
  - 80%
  - 95%
- 11-27.** Your patient has been assigned a FIGO score of 9 for choriocarcinoma. Which of the following is considered typical treatment?
- Radical hysterectomy
  - EMA-CO combination chemotherapy
  - Methotrexate plus radical hysterectomy
  - Methotrexate plus external beam pelvic radiation
- 11-28.** Chemotherapeutic agents in the EMA-CO regimen include all **EXCEPT** which of the following?
- Etoposide
  - Mithramycin
  - Actinomycin-D
  - Cyclophosphamide
- 11-29.** Evidence-based concerns regarding future pregnancy plans following treatment of gestational trophoblastic disease include which of the following?
- Decrease fertility
  - Increased risk of fetal trisomy
  - Increased risk of a second molar pregnancy
  - Increased risk of fetal congenital structural anomalies

**Chapter 11 Answer Key**

| Question number | Letter answer | Page cited | Header cited                        | Question number | Letter answer | Page cited | Header cited                   |
|-----------------|---------------|------------|-------------------------------------|-----------------|---------------|------------|--------------------------------|
| 11-1            | c             | p. 258     | Table 11-1                          | 11-17           | d             | p. 262     | Invasive Mole                  |
| 11-2            | d             | p. 257     | Hydatidiform Mole-Molar Pregnancy   | 11-18           | b             | p. 262     | Gestational Choriocarcinoma    |
| 11-3            | b             | p. 257     | Complete Mole                       | 11-19           | c             | p. 262     | Gestational Choriocarcinoma    |
| 11-4            | b             | p. 258     | Table 11-2                          | 11-20           | b             | p. 262     | Gestational Choriocarcinoma    |
| 11-5            | a             | p. 258     | Partial Mole                        | 11-21           | a             | p. 262     | Gestational Choriocarcinoma    |
| 11-6            | a             | p. 258     | Partial Mole                        | 11-22           | c             | p. 263     | Clinical Course                |
| 11-7            | d             | p. 259     | Theca-lutein cysts                  | 11-23           | c             | p. 263     | Diagnosis                      |
| 11-8            | d             | p. 259     | Theca-lutein cysts                  | 11-24           | c             | p. 264     | Staging and Prognostic Scoring |
| 11-9            | d             | p. 259     | Epidemiology and Risk Factors       | 11-25           | d             | p. 264     | Treatment                      |
| 11-10           | c             | p. 560     | Clinical Presentation               | 11-26           | d             | p. 264     | Treatment                      |
| 11-11           | c             | p. 560     | Management                          | 11-27           | b             | p. 264     | Treatment                      |
| 11-12           | b             | p. 561     | Suction Curettage                   | 11-28           | b             | p. 264     | Treatment                      |
| 11-13           | c             | p. 261     | Postevacuation Surveillance         | 11-29           | c             | p. 264     | Subsequent Pregnancy           |
| 11-14           | a             | p. 261     | Postevacuation Surveillance         |                 |               |            |                                |
| 11-15           | d             | p. 262     | Gestational Trophoblastic Neoplasia |                 |               |            |                                |
| 11-16           | d             | p. 262     | Table 11-3                          |                 |               |            |                                |



## CHAPTER 12

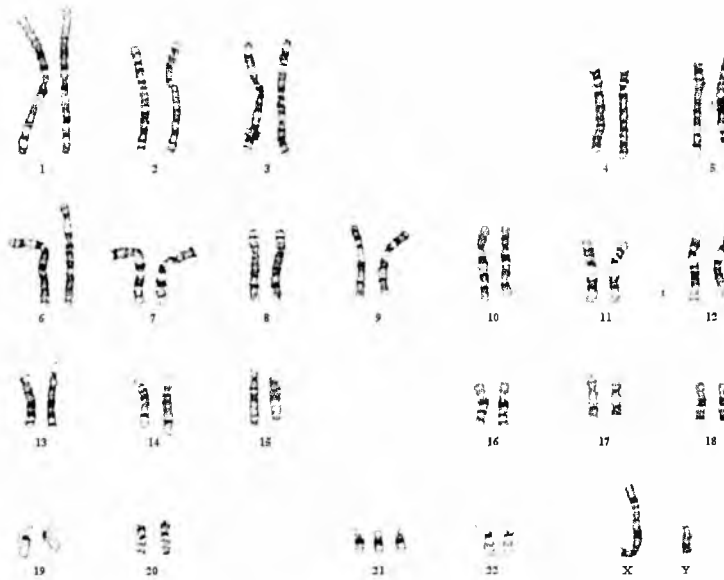
### Genetics

**12-1.** According to the International System for Human Cytogenetic Nomenclature, how would an individual be described if the karyotype was 45,XX,der(13;14)(q10;q10)?

- a. A female with monosomy of chromosome 13
- b. A female with a balanced Robertsonian translocation
- c. A female with a pericentric inversion
- d. A female with an unbalanced translocation

**12-4.** The karyotype shown here is associated with which genetic syndrome?

- a. Klinefelter syndrome
- b. Turner syndrome
- c. Down syndrome
- d. Noonan syndrome



Reproduced, with permission, from Cunningham FG, Leveno KJ, Bloom SL, et al: Williams Obstetrics, 23rd ed. New York, McGraw-Hill, 2010.

**12-2.** Which of the following abnormalities of chromosomal number are most frequently seen in spontaneous abortions?

- a. Autosomal trisomies
- b. Monosomies
- c. Triploidy
- d. Tetraploidy

**12-3.** Which of the following chromosomal abnormalities occur more frequently with advanced maternal age?

- a. 45,X
- b. 46,XY
- c. 47,XX,+18
- d. 47,XXX

**12-5.** In a woman with a previous pregnancy affected by an autosomal trisomy, what is her risk of recurrence until her age-related risk predominates?

- a. 1%
- b. 4%
- c. 8%
- d. 15%

- 12-6. The following sonographic image demonstrates alobar holoprosencephaly in a 14-week fetus. This finding is most consistently associated with which chromosomal abnormality? FT = fused thalami; V = ventricle.



Reproduced, with permission, from Cunningham FG, Leveno KJ, Bloom SL, et al: Williams Obstetrics, 23rd ed. New York, McGraw-Hill, 2010.

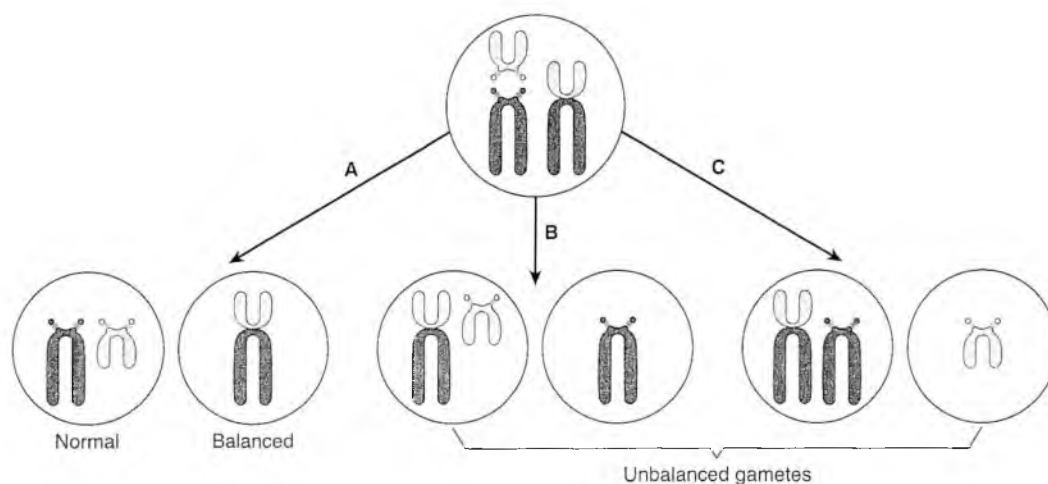
- a. Trisomy X
  - b. Trisomy 18
  - c. Trisomy 21
  - d. Trisomy 13
- 12-7. Which of the following sonographic findings would be characteristic of a *diandric* triploid conception?
- a. A small, thin placenta
  - b. Abundant placental tissue with variable fetal parts
  - c. A formed but severely growth-restricted fetus
  - d. All of the above

- 12-8. The only monosomy compatible with extrauterine life is associated with which chromosome?
- a. 13
  - b. 18
  - c. 21
  - d. X

- 12-9. Which of the following statements is true regarding males with Klinefelter syndrome?
- a. Mental retardation is common and can be severe.
  - b. There is an increased incidence of associated anomalies.
  - c. They are infertile due to gonadal dysgenesis.
  - d. The diagnosis is usually made immediately after birth due to the characteristic phenotype.

- 12-10. Which of the following are characteristic of microdeletion syndromes?
- a. Most can be diagnosed with traditional metaphase karyotyping.
  - b. Fluorescence in-situ hybridization (FISH) is rarely required for diagnosis.
  - c. They are inherited in an X-linked fashion.
  - d. Different phenotypes can be caused by the same microdeletion.

- 12-11. The following image represents the possible gametes that can be produced by a carrier of a Robertsonian translocation during meiosis. Which of the following pairs of gametes could result in a phenotypically normal offspring?
- a. Arrow A
  - b. Arrow B
  - c. Arrow C
  - d. None of the above



Reproduced, with permission, from McPhee SJ, Hammer GD: Pathophysiology of Disease: An Introduction to Clinical Medicine, 6th ed. New York, McGraw-Hill, 2010, Figure 2-15.

- 12-12.** Which of the following acrocentric chromosomes is involved in virtually all Robertsonian translocations?
- 13
  - 14
  - 15
  - 21
- 12-13.** Compared with a *nonhomologous* Robertsonian translocation, what is different about a *homologous* Robertsonian translocation?
- It is considered a ring chromosome.
  - There is no phenotypically silent carrier state.
  - Only unbalanced gametes are produced.
  - Only female offspring could be affected.
- 12-14.** A 41-year-old primigravida undergoes chorionic villus sampling at 11 weeks' gestation, and trisomy 16 is identified. However, amniocentesis at 15 weeks reveals a normal 46,XX karyotype. What can you tell her about this finding?
- This may have been the result of "trisomic rescue" in which an early population of cells lost the extra chromosome.
  - Some genetic syndromes arise in this fashion if the fetus retains two copies of the chromosome from the same parent.
  - Adverse perinatal outcomes such as fetal-growth restriction have been associated with this phenomenon.
  - All of the above.
- 12-15.** The increased recurrence risk of de novo autosomal dominant mutations is explained by which of the following concepts?
- Autosomal chimerism
  - Gonadal mosaicism
  - Autosomal mosaicism
  - Gonadal chimerism
- 12-16.** Which of the following terms is used to describe the degree to which an individual with an autosomal dominant condition demonstrates the phenotypic features?
- Penetrance
  - Expressivity
  - Variability
  - Concordance
- 12-17.** Which of the following genetic disorders would be expected to occur more frequently in the setting of advance paternal age?
- Tuberous sclerosis
  - Down syndrome
  - Sickle cell anemia
  - Turner syndrome
- 12-18.** The image below is a peripheral blood smear taken from a patient who presents in an acute pain crisis. Assuming her partner is a heterozygous carrier for this condition, what is the risk that their offspring will be affected?



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- 0%
- 25%
- 50%
- 75%

- 12-19.** The offspring of consanguinous relationships are at increased risk for what types of genetic syndromes?
- Autosomal dominant
  - X-linked recessive
  - Autosomal recessive
  - X-linked dominant
- 12-20.** A couple is referred for genetic counseling as the woman has a number of relatives with the same unusual genetic syndrome. A pedigree of her family reveals that both males and females are equally affected but transmission occurs only through females. Which pattern of inheritance is suggested?
- X-linked dominant
  - Mitochondrial
  - Autosomal dominant
  - Multifactorial
- 12-21.** Although once thought to be a silent carrier state, it is now recognized that premutation carriers of the fragile X gene are at increased risk to develop which of the following?
- Late onset tremor-ataxia syndrome
  - Premature ovarian failure
  - Autistic-like behavior
  - All of the above

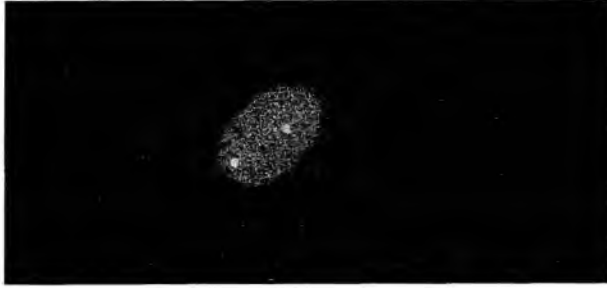
- 12-22.** The following ultrasound image demonstrates a fetus with a lumbosacral myelomeningocele. This condition is a classic example of which inheritance pattern?



Reproduced, with permission, from Cunningham FG, Leveno KJ, Bloom SL, et al: Williams Obstetrics, 23rd ed. New York, McGraw-Hill, 2010.

- Multifactorial
  - Mitochondrial
  - Triplet repeat expansion
  - Autosomal recessive
- 12-23.** A woman with one previous child affected by a neural-tube defect who does not take periconceptional folate supplementation has what approximate risk for recurrence?
- Less than 1%
  - 3–4%
  - 9–10%
  - 15%

- 12-24.** The image below represents amniotic fluid analyzed with fluorescence in-situ hybridization (FISH). If the green probe is directed at the X chromosome and the red probe is directed at chromosome 21, which karyotype is correct?



Reproduced, with permission, from Fauci AS, Braunwald E, Kasper DL: *Harrison's Principles of Internal Medicine*, 17th ed. New York, McGraw-Hill, 2008, Figure 63-2B.

- a. 46,XX,+21
- b. 47,XX,+21
- c. 46,XY,+21
- d. 47,XY,+21

- 12-25.** Although the technique has limitations, linkage analysis is most useful in which situation?
- a. Detection of aneuploidy
  - b. When no family members are available for testing
  - c. When the specific gene has not been identified
  - d. For multifactorial traits

**Chapter 12 Answer Key**

| Question number | Letter answer | Page cited | Header cited              |
|-----------------|---------------|------------|---------------------------|
| <b>12-1</b>     | <b>b</b>      | p. 267     | Chromosomal Abnormalities |
| <b>12-2</b>     | <b>a</b>      | p. 268     | Table 12-2                |
| <b>12-3</b>     | <b>c</b>      | p. 267     | Chromosomal Abnormalities |
| <b>12-4</b>     | <b>c</b>      | p. 269     | Chromosomal Abnormalities |
| <b>12-5</b>     | <b>a</b>      | p. 268     | Chromosomal Abnormalities |
| <b>12-6</b>     | <b>d</b>      | p. 270     | Chromosomal Abnormalities |
| <b>12-7</b>     | <b>b</b>      | p. 270     | Chromosomal Abnormalities |
| <b>12-8</b>     | <b>d</b>      | p. 270     | Chromosomal Abnormalities |
| <b>12-9</b>     | <b>c</b>      | p. 271     | Chromosomal Abnormalities |
| <b>12-10</b>    | <b>d</b>      | p. 272     | Chromosomal Abnormalities |
| <b>12-11</b>    | <b>a</b>      | p. 274     | Chromosomal Abnormalities |
| <b>12-12</b>    | <b>b</b>      | p. 273     | Chromosomal Abnormalities |
| <b>12-13</b>    | <b>c</b>      | p. 274     | Chromosomal Abnormalities |

| Question number | Letter answer | Page cited | Header cited              |
|-----------------|---------------|------------|---------------------------|
| <b>12-14</b>    | <b>d</b>      | p. 275     | Chromosomal Abnormalities |
| <b>12-15</b>    | <b>b</b>      | p. 275     | Chromosomal Abnormalities |
| <b>12-16</b>    | <b>b</b>      | p. 276     | Modes of Inheritance      |
| <b>12-17</b>    | <b>a</b>      | p. 276     | Modes of Inheritance      |
| <b>12-18</b>    | <b>c</b>      | p. 277     | Modes of Inheritance      |
| <b>12-19</b>    | <b>c</b>      | p. 277     | Modes of Inheritance      |
| <b>12-20</b>    | <b>b</b>      | p. 278     | Modes of Inheritance      |
| <b>12-21</b>    | <b>d</b>      | p. 279     | Modes of Inheritance      |
| <b>12-22</b>    | <b>a</b>      | p. 281     | Modes of Inheritance      |
| <b>12-23</b>    | <b>b</b>      | p. 282     | Modes of Inheritance      |
| <b>12-24</b>    | <b>b</b>      | p. 283     | Genetic Tests             |
| <b>12-25</b>    | <b>c</b>      | p. 283     | Genetic Tests             |

## CHAPTER 13

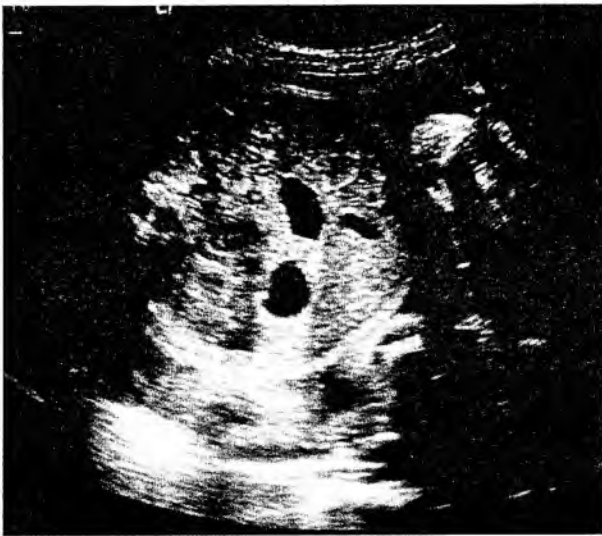
# Prenatal Diagnosis and Fetal Therapy

- 13-1.** Using a threshold of  $>2.5$  multiples of the median (MoM) for a maternal serum  $\alpha$ -fetoprotein level, what percent of infants with spina bifida was detected prenatally in the original study from the United Kingdom?
- 39%
  - 59%
  - 79%
  - 99%
- 13-2.** If a woman has had a prior child with a neural-tube defect, what dose of folate is recommended that she should take prior to conception to reduce the recurrence risk?
- 1 mg/d
  - 4 mg/d
  - 400  $\mu$ g/d
  - No additional supplementation needed since foods became fortified in the United States
- 13-3.** All **EXCEPT** which of the following geographic areas have high rates of neural-tube defects?
- Israel
  - China
  - Egypt
  - England
- 13-4.** What is the source of the  $\alpha$ -fetoprotein found in maternal serum that is used for prenatal screening strategies?
- Placenta
  - Fetal vertebrae
  - Fetal neural tissue
  - Fetal liver and gastrointestinal (GI) tract
- 13-5.** Which of the following complications is **NOT** associated with an unexplained elevation in maternal serum  $\alpha$ -fetoprotein (MSAFP)?
- Preterm birth
  - Placental abruption
  - Fetal-growth restriction
  - Velamentous insertion of the cord
- 13-6.** A first-trimester screen is performed, and the patient receives her result only if the test shows an increased risk for aneuploidy. This is an example of what type of screening?
- Integrated
  - Sequential
  - Differentiated
  - None of the above
- 13-7.** In this image, these cystic lesions seen around the fetal neck are associated with which aneuploidy?



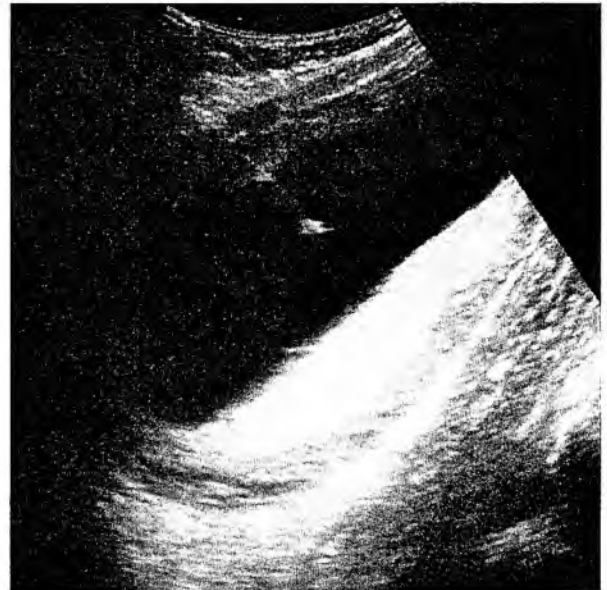
- Triploidy
  - Monosomy X
  - Down syndrome
  - All of the above
- 13-8.** The risk of aneuploidy in a fetus found to have cystic hygromas is as high as which of the following?
- 10%
  - 30%
  - 50%
  - 70%

- 13-9.** A patient with an increased risk for Down syndrome has a second-trimester sonographic examination in which no major abnormalities are seen. Which of the following is the next management step for this patient?
- Reassure her that the fetus is unaffected by Down syndrome.
  - Perform 3-D sonography to better assess the likelihood of Down syndrome.
  - Definitely perform amniocentesis since fetuses with Down syndrome cannot be detected with sonography.
  - Counsel her that 25–30% of fetuses with Down syndrome have major abnormalities that can be detected by sonography.
- 13-10.** What is the risk of Down syndrome associated with the sonographic finding shown here?



- 10%
  - 20%
  - 40%
  - 60%
- 13-11.** Which of the following statements regarding nuchal translucency evaluation is true?
- It is not effective in multiple gestations.
  - Used alone, it detects 80% of Down syndrome cases.
  - The highest Down syndrome detection rate occurs when it is applied as part of an integrated screen.
  - When combined with serum markers in the first trimester, it detects 100% of Down syndrome cases.

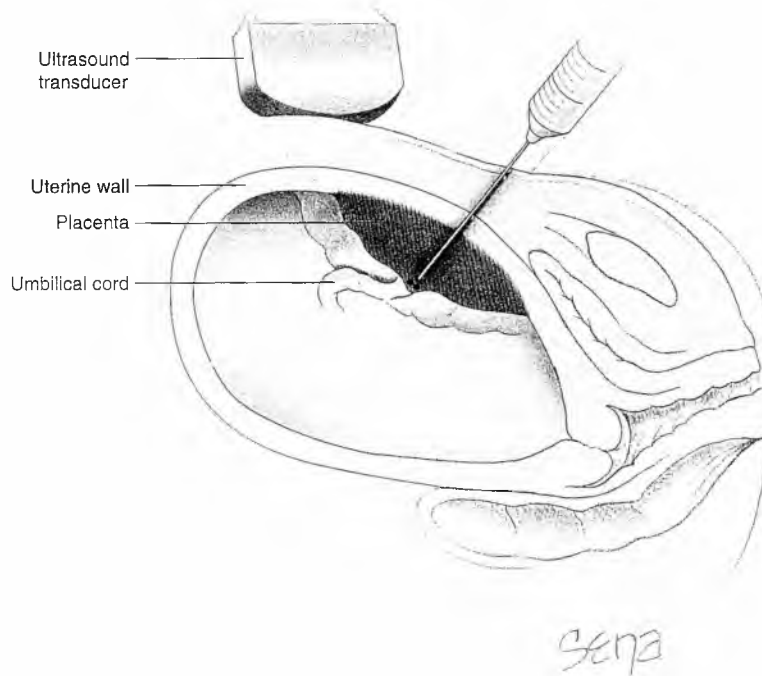
- 13-12.** All **EXCEPT** which of the following are “soft signs” or second-trimester sonographic markers of Down syndrome?
- Echogenic bowel
  - Short long bones
  - Nasal bone hypoplasia
  - Small ventricular septal defect
- 13-13.** Which of the following statements regarding cystic fibrosis (CF) screening is true?
- The American College of Obstetricians and Gynecologists (ACOG) recommends routine screening for CF in all couples.
  - The test detects 65% of CF carriers in the African-American population.
  - CF screens test for all of the known mutations that cause CF.
  - CF is caused by a mutation in a gene on the long arm of chromosome 23.
- 13-14.** What is the procedure-related loss rate of the procedure shown here sonographically when performed in the second trimester?



Contributed by Dr. Tamara Chao.

- 1/50
- 1/100
- 1/200
- 1/300–1/500





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**13-15.** What is the most common complication associated with the procedure shown in this drawing?

- a. Cord hematoma
- b. Fetal bradycardia
- c. Rupture of membranes
- d. Fetal-maternal hemorrhage

**13-16.** Preimplantation genetic diagnosis may be indicated in all **EXCEPT** which of the following diagnoses?

- a. Trisomy 13
- b. Hemophilia A
- c. Cystic fibrosis
- d. Sickle cell anemia

**13-17.** After delivery, which of the following is the longest that fetal cells can persist in maternal circulation?

- a. 1 year
- b. 24 hours
- c. >10 years
- d. 3 to 6 months

**13-18.** A patient has an MSAFP result that is greater than 3.0 multiples of the median. Likely possibilities for this finding include all **EXCEPT** which of the following?

- a. Normal fetus
- b. Increased risk of spina bifida
- c. Increased risk of omphalocele
- d. Increased risk of Down syndrome

**13-19.** A patient whose fetus had the sonographic finding shown here underwent a chorionic villus sampling, and a normal karyotype was found. What test should also be offered to this patient?



- a. Fetal echocardiography
- b. Hemoglobin electrophoresis
- c. Second-trimester amniocentesis
- d. Maternal serum  $\alpha$ -fetoprotein testing

- 13-20.** The findings seen in the sonographic image from question 13-19 provide the basis for which of the following?
- Screening patients for cystic fibrosis
  - Offering a screening test for neural-tube defects
  - Recommending amniocentesis to all women aged 35 years or older
  - None of the above
- 13-21.** What is the incidence of major abnormalities detected at birth?
- 0.5%
  - 1%
  - 2-3%
  - 6%
- 13-22.** A patient undergoes amniocentesis at 15 weeks' gestation and has spontaneous rupture of membranes 24 hours later. She has decreased amniotic fluid identified sonographically for the rest of the pregnancy, and the infant is born with contractures. Which of the following terms describes this type of abnormality?
- Disruption
  - Syndrome
  - Deformation
  - Malformation
- 13-23.** At delivery, ex utero intrapartum treatment (EXIT) procedures may be indicated in the management of which of the following fetal conditions?
- Large anterior encephalocele
  - Hypoplastic left heart syndrome
  - Large sacrococcygeal teratoma
  - Congenital high airway obstruction sequence

- 13-24.** Increased risks of which of the following are seen when this procedure, shown sonographically here, is performed at a gestational age less than 9 weeks?



Contributed by Dr. Michael Zaretsky.

- Fetal death
  - Limb-reduction defects
  - Oromandibular defects
  - Cavernous hemangiomas
- 13-25.** A woman has a daughter who was born with the finding shown in this photograph and with newborn hypertension. Now during her second pregnancy, which of the following reflects correct management?



Reproduced, with permission, from Brunicaudi FC, Anderson DK, Billiar TR, et al: Schwartz's Principles of Surgery. 9th ed. New York, McGraw-Hill, 2010, Figure 39-36.

- Await newborn screening results from this second pregnancy
- Begin dexamethasone early in the first trimester
- Defer corticosteroid treatment until after prenatal diagnosis identifies the fetus as female
- Delay corticosteroid treatment until molecular testing confirms the fetus is affected

## Chapter 13 Answer Key

| Question number | Letter answer | Page cited | Header cited                                  |
|-----------------|---------------|------------|-----------------------------------------------|
| <b>13-1</b>     | <b>c</b>      | p. 288     | Neural-Tube Defects                           |
| <b>13-2</b>     | <b>b</b>      | p. 288     | Risk Factors for Neural-Tube Defects          |
| <b>13-3</b>     | <b>a</b>      | p. 288     | Table 13-1                                    |
| <b>13-4</b>     | <b>d</b>      | p. 288     | Alpha-fetoprotein                             |
| <b>13-5</b>     | <b>d</b>      | p. 292     | Unexplained Maternal Serum AFP Elevation      |
| <b>13-6</b>     | <b>b</b>      | p. 293     | Table 13-3                                    |
| <b>13-7</b>     | <b>d</b>      | p. 295     | Table 13-4                                    |
| <b>13-8</b>     | <b>c</b>      | p. 295     | Table 13-4                                    |
| <b>13-9</b>     | <b>d</b>      | p. 294     | Major Structural Defects                      |
| <b>13-10</b>    | <b>c</b>      | p. 295     | Table 13-4                                    |
| <b>13-11</b>    | <b>c</b>      | p. 294     | Combined First and Second Trimester Screening |
| <b>13-12</b>    | <b>d</b>      | p. 295     | Table 13-5                                    |
| <b>13-13</b>    | <b>b</b>      | p. 298     | Carrier Screening                             |

| Question number | Letter answer | Page cited | Header cited                          |
|-----------------|---------------|------------|---------------------------------------|
| <b>13-14</b>    | <b>d</b>      | p. 299     | Second-Trimester Amniocentesis        |
| <b>13-15</b>    | <b>d</b>      | p. 301     | Complications                         |
| <b>13-16</b>    | <b>a</b>      | p. 302     | Preimplantation Genetic Diagnosis     |
| <b>13-17</b>    | <b>c</b>      | p. 302     | Fetal Cells in Maternal Circulation   |
| <b>13-18</b>    | <b>d</b>      | p. 289     | Figure 13-2                           |
| <b>13-19</b>    | <b>a</b>      | p. 294     | First-Trimester Screening             |
| <b>13-20</b>    | <b>d</b>      | p. 294     | First-Trimester Screening             |
| <b>13-21</b>    | <b>c</b>      | p. 294     | Major Structural Defects              |
| <b>13-22</b>    | <b>c</b>      | p. 287     | Etiology of Birth Defects             |
| <b>13-23</b>    | <b>d</b>      | p. 308     | Ex Utero Intrapartum Treatment (EXIT) |
| <b>13-24</b>    | <b>b</b>      | p. 300     | Chorionic Villus Sampling             |
| <b>13-25</b>    | <b>b</b>      | p. 303     | Congenital Adrenal Hyperplasia        |

## CHAPTER 14

# Teratology and Medications That Affect the Fetus

- 14-1. Which of the following defines a teratogen?
- An agent that alters growth
  - An agent that interferes with normal maturation and function of an organ
  - An agent that acts during embryonic or fetal development to produce a permanent alteration of form or function
  - All of the above
- 14-2. What is the background rate of major congenital anomalies diagnosed at birth?
- 1%
  - 3%
  - 6%
  - 10%
- 14-3. Which of the following criteria is not required to prove teratogenicity of a particular agent?
- The agent must cross the placenta.
  - Exposure to the agent occurred during organogenesis.
  - The agent must be teratogenic in experimental animals.
  - The association with the teratogen must be biologically plausible.
- 14-4. Which of the following drugs is classified as Category C during pregnancy?
- Penicillins
  - $\beta$ -Blockers
  - Valproic acid
  - Levothyroxine
- 14-5. Paternal exposure to which of the following agents may increase the risk of adverse fetal outcome?
- Mercury
  - Warfarin
  - Radiation
  - Valproic acid
- 14-6. In addition to having dysmorphic facial features and postnatal growth restriction, what other criteria are required for the diagnosis of fetal alcohol syndrome?
- Scoliosis
  - Dysplastic kidneys
  - Ventricular septal defect
  - Head size <10th percentile
- 14-7. The following image shows a child with the typical facies of one exposed prenatally to which of the following?



Reproduced, with permission, from Fuster V, O'Rourke RA, Walsh RA, et al: *Hurst's the Heart*. 12th ed. New York, McGraw-Hill, 2008, Figure 12-15.

- Alcohol
- Leflunomide
- Sulfonamide
- Chloramphenicol

- 14-8.** Of these listed, which anticonvulsant has the highest known risk of teratogenic effect?
- Lamotrigine
  - Levetiracetam
  - Topiramate
  - Phenobarbital
- 14-9.** A 32-week growth-restricted fetus has oligohydramnios and an abnormal calvarium. Which antihypertensive agent taken by the mother may have caused these problems?
- Lisinopril
  - Nifedipine
  - Verapamil
  - Methyldopa
- 14-10.** Use of the nonsteroidal anti-inflammatory agent indomethacin during pregnancy is associated with which of the following?
- Premature closure of the ductus arteriosus
  - Bronchopulmonary dysplasia
  - Oligohydramnios
  - All of the above
- 14-11.** Considered Category X in pregnancy, which antiviral drug causes skull, palate, jaw, eye, limb, skeletal, and gastrointestinal anomalies in rodent models?
- Ribavirin
  - Efavirenz
  - Zidovudine
  - Nevirapine
- 14-12.** Your patient did not realize she was pregnant until she was 6 weeks past her last menstrual period (LMP). At that time, she discontinued her birth control pills. Which of the following is appropriate counseling?
- Her male fetus may have been feminized.
  - Her female fetus may have been masculinized.
  - Her female fetus may have ambiguous genitalia.
  - Her exposure to hormones will have no effect on the external genitalia of her fetus.
- 14-13.** Vaginal clear-cell adenocarcinoma is typically associated to prenatal exposure to which of the following?
- Danazol
  - Testosterone
  - Diethylstilbestrol
  - Medroxyprogesterone acetate

- 14-14.** Which drug is associated with the following rare cardiac anomaly shown in this sonogram?



- Lithium
  - Leflunomide
  - Indomethacin
  - Cyclophosphamide
- 14-15.** Although overall risk is small, use of selective serotonin-reuptake inhibitors (SSRIs) during pregnancy has been associated with all EXCEPT which of the following malformations?
- Omphalocele
  - Gastroschisis
  - Craniosynostosis
  - Anencephaly
- 14-16.** The severe form of the neonatal behavioral syndrome associated with prenatal exposure to SSRIs includes all EXCEPT which of the following?
- Seizures
  - Hyperpyrexia
  - Need for intubation
  - Persistent pulmonary hypertension

- 14-17. The congenital malformations shown in these photographs are typical of prenatal exposure to which agent?



A



B

Reproduced, with permission, from Cunningham FG, Leveno KJ, Bloom SL, et al: *Williams Obstetrics*, 23rd ed. New York: McGraw-Hill, 2010.

- a. Alcohol
- b. Warfarin
- c. Isotretinoin
- d. Valproic acid

- 14-18. The most severe malformations seen with the use of vitamin A-derived compounds are associated with which of the following?

- a. Tretinoin
- b. Isotretinoin
- c.  $\beta$ -Carotene
- d. All-trans retinoic acid

- 14-19. The congenital limb malformation shown in this photograph is linked to maternal use of which drug in pregnancy?



Reproduced, with permission, from Fuster V, O'Rourke RA, Walsh RA, et al: *Hurst's the Heart*. 12th ed. New York, McGraw-Hill, 2008, Figure 12-6.

- a. Warfarin
- b. Thalidomide
- c. Leflunomide
- d. Phenobarbital

- 14-20. Current uses for this known teratogen include treatment of leprosy, cutaneous lupus, and chronic graft-versus-host disease.

- a. Warfarin
- b. Phenytoin
- c. Thalidomide
- d. Valproic acid

- 14-21.** The nasal hypoplasia and depressed nasal bridge in this child are typical of prenatal exposure to which of the following?



Reproduced, with permission, from Cunningham FG, Leveno KJ, Bloom SL, et al: Williams Obstetrics, 23rd ed. New York, McGraw-Hill, 2010.

- a. Warfarin
- b. Corticosteroids
- c. Diethylstilbestrol
- d. Mycophenolate mofetil

- 14-22.** Use of which drug in the second and third trimester may lead to central nervous system defects such as agenesis of the corpus callosum, Dandy-Walker malformation, and midline cerebellar malformations?
- a. Heroin
  - b. Cocaine
  - c. Warfarin
  - d. Isotretinoin
- 14-23.** Among recreational drugs, which one has been linked to skull defects, cutis aplasia, and porencephaly?
- a. Heroin
  - b. Cocaine
  - c. Methadone
  - d. Methamphetamine
- 14-24.** Cigarette smoking in pregnancy is linked to an increased risk of all **EXCEPT** which of the following?
- a. Microcephaly
  - b. Cleft lip and palate
  - c. Congenital heart disease
  - d. Neonatal hyperglycemia
- 14-25.** Which of the following has not been shown to be a human teratogen?
- a. Toluene
  - b. Marijuana
  - c. Methadone
  - d. Phencyclidine

**Chapter 14 Answer Key**

| Question number | Letter answer | Page cited | Header cited                                     |
|-----------------|---------------|------------|--------------------------------------------------|
| 14-1            | c             | p. 312     | Teratology                                       |
| 14-2            | b             | p. 312     | Introduction                                     |
| 14-3            | b             | p. 313     | Table 14-2                                       |
| 14-4            | b             | p. 315     | Table 14-3                                       |
| 14-5            | a             | p. 316     | Paternal Exposures                               |
| 14-6            | d             | p. 317     | Alcohol and Table 14-4                           |
| 14-7            | a             | p. 317     | Alcohol and Table 14-4                           |
| 14-8            | d             | p. 318     | Table 14-5                                       |
| 14-9            | a             | p. 319     | ACE Inhibitors and Angiotensin Receptor Blockers |
| 14-10           | d             | p. 319     | NSAIDs                                           |
| 14-11           | a             | p. 321     | Antivirals                                       |
| 14-12           | d             | p. 321     | Hormones                                         |

| Question number | Letter answer | Page cited | Header cited           |
|-----------------|---------------|------------|------------------------|
| 14-13           | c             | p. 322     | Diethylstilbestrol     |
| 14-14           | a             | p. 323     | Lithium                |
| 14-15           | b             | p. 323     | SSRIs                  |
| 14-16           | d             | p. 324     | SSRIs/Neonatal Effects |
| 14-17           | c             | p. 325     | Figure 14-4            |
| 14-18           | b             | p. 324     | Isotretinoin           |
| 14-19           | b             | p. 325     | Thalidomide            |
| 14-20           | c             | p. 325     | Thalidomide            |
| 14-21           | a             | p. 326     | Figure 14-5            |
| 14-22           | c             | p. 326     | Warfarin               |
| 14-23           | b             | p. 327     | Cocaine                |
| 14-24           | d             | p. 329     | Tobacco                |
| 14-25           | b             | p. 328     | Miscellaneous Drugs    |

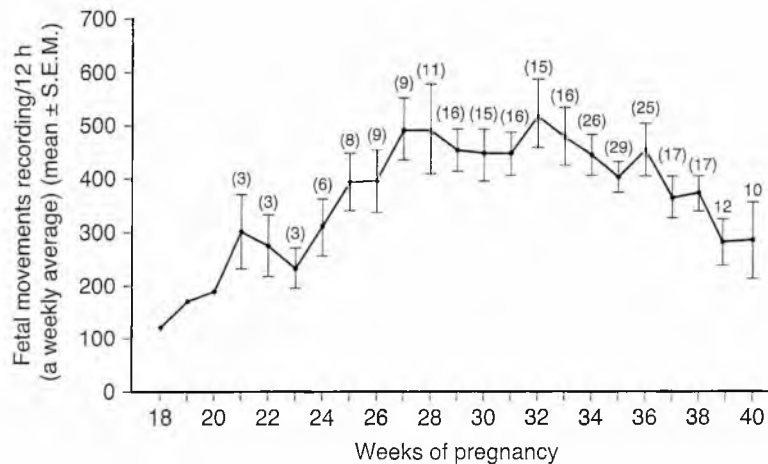


## CHAPTER 15

# Antepartum Assessment

- 15-1.** What is the goal of antepartum fetal surveillance?
- Indicate the timing of intervention
  - Prevent fetal death
  - Improve negative-predictive values for antepartum testing
  - All of the above
- 15-2.** Which of the following percentages reflects the negative-predictive value (a true negative test) for most forms of fetal surveillance?
- 71.5%
  - 87.6%
  - 93.6%
  - 99.8%

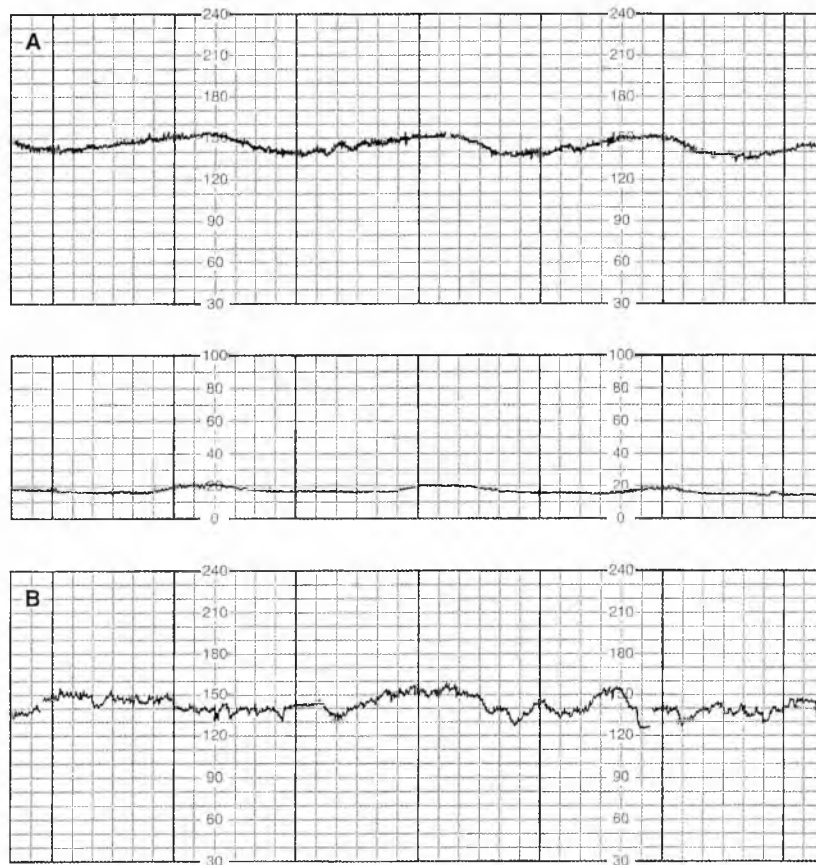
- 15-4.** Common fetal movement counting protocols include which of the following?
- Monitor 2 hours daily; an accepted count equals or exceeds a previously established baseline count
  - 10 movements in 1 hour
  - 10 movements in 2 hours
  - Informal maternal perceptions of fetal activity are clinically meaningless.
- 15-5.** The figure below illustrates which of the following?
- Maximum counts of fetal movement occur at 32 weeks.
  - Minimum counts of fetal movement occur at term.
  - Daily movement counts reach about 16 at 29 weeks.
  - Declining amniotic fluid volume and space account for decreased fetal movements at 32 weeks.



Reproduced, with permission, from Sadovsky E, Evron S, Weinstein D: Daily fetal movement recording in normal pregnancy. *Riv Obstet Gynecol Practica Med Perinatal* 59:395, 1979.

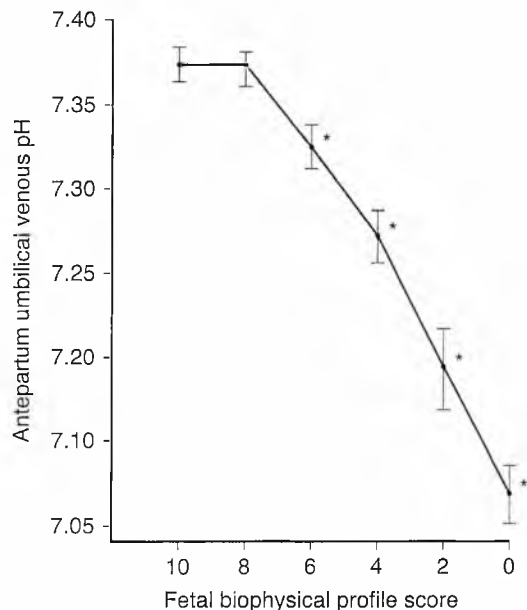
- 15-3.** Concerning sleep cyclicality (sleep-wake cycles), which of the following is true?
- Varies from 5 to 120 minutes
  - Mean length of inactive state for term fetuses is 23 minutes.
  - Mean length of inactive state for term fetuses is 37 minutes.
  - In normal term pregnancies, the longest period of inactivity is 68 minutes.
- 15-6.** Which of the following variables does not affect fetal respiratory movements?
- Hypertriglyceridemia
  - Hypoxia
  - Amniocentesis
  - Gestational age

- 15-7.** Concerning contraction stress testing, which of the following is true?
- It is positive if late decelerations follow at least 40% of contractions.
  - It is unsatisfactory if there are less than three contractions in 10 minutes.
  - If performed with oxytocin, it uses a dilute intravenous infusion initiated at 1 mU/min.
  - It is reactive if two fetal heart rate accelerations are noted in 10 minutes.
- 15-8.** Which of the following is true of nipple stimulation?
- It is unsuited for contraction stress testing.
  - It is advantageous because of reduced cost and shortened testing times.
  - It requires more time than oxytocin to induce contractions.
  - It is no longer performed because of unpredictable uterine hyperstimulation.
- 15-9.** Which of the following is true of the nonstress test (NST)?
- It is a test of uteroplacental function.
  - It is reactive if two or more accelerations occur within 10 minutes of beginning the test.
  - It requires 60 minutes or more of monitoring to accommodate fetal sleep cycles.
  - It predicts fetal compromise if there are insufficient fetal accelerations.
- 15-10.** Which of the following describes the fetal heart rate tracing in panel A?
- It has good variability.
  - It has a baseline of 150.
  - It shows good accelerations.
  - It does not contain late decelerations.



Reproduced, with permission, from Cunningham FG, Leveno KJ, Bloom SL, et al: Williams Obstetrics, 23rd ed. New York, McGraw-Hill, 2010.

- 15-11.** A “terminal cardiotocogram” includes which of the following?
- Baseline oscillation greater than 5 bpm
  - Occasional accelerations
  - Late decelerations with spontaneous contractions
  - Spontaneous decelerations
- 15-12.** False normal NSTs are associated with all **EXCEPT** which of the following?
- Abnormal cord position
  - Malformations
  - Placental abruption
  - Asymptomatic bacteriuria
- 15-13.** The biophysical profile (BPP) includes all **EXCEPT** which of the following?
- Nonstress test
  - Fetal tone
  - Doppler studies
  - Amnionic fluid volume
- 15-14.** This figure illustrates which of the following concepts regarding the BPP?

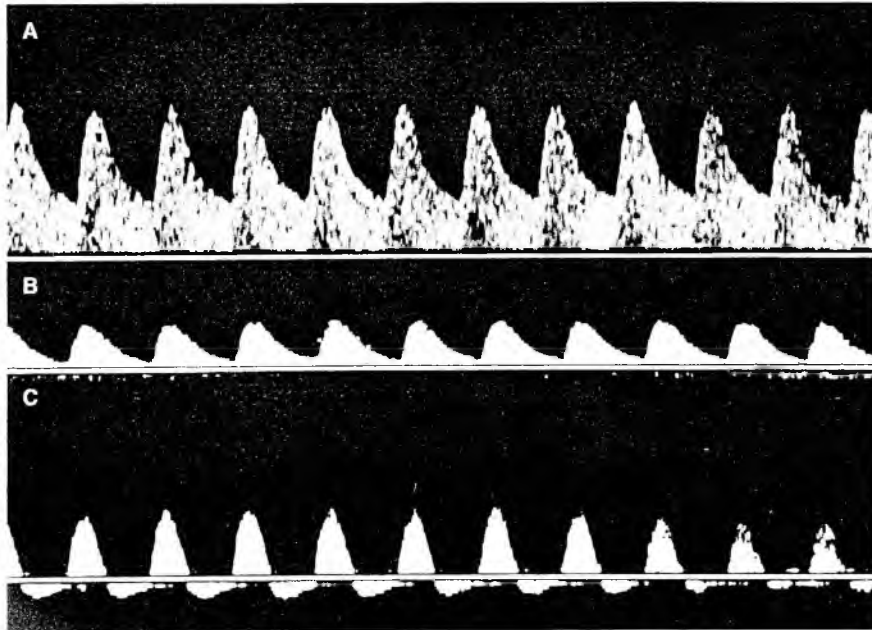


This article was published in *American Journal of Obstetrics & Gynecology*, Vol. 169, No. 4, FA Manning, R Snijders, CR Harman, et al: Fetal biophysical profile score. VI. Correlation with antepartum umbilical venous fetal pH, pp. 755–763, © Elsevier, 1993.

- Score of 8/10 is associated with an umbilical venous pH of 7.30 or below.
- Score of 6/10 is indication to proceed with delivery.
- Score of 2/10 is associated with acidemia.
- Score of 4/10 is similar to 6/10 in regard to umbilical venous pH.

- 15-15.** Which of the following is true of a modified BPP?
- It is normal if the amnionic fluid index (AFI) = 5.1 cm, and NST is reactive.
  - It has a false-negative rate of 4.8 per 1,000 and a false-positive rate of 1.5%.
  - It combines NST with fetal breathing assessment.
  - It is superior to other forms of fetal surveillance.
- 15-16.** Fetal vascular structures evaluated to assess fetal health include all **EXCEPT** which of the following?
- Middle cerebral artery
  - Ductus venosus
  - Umbilical artery
  - Umbilical vein
- 15-17.** Which of the following is true of Doppler velocimetry, as applied to fetus surveillance?
- It is superior to other modes of fetal surveillance.
  - It characterizes downstream impedance.
  - It focuses primarily on the systolic waveform of blood flow.
  - It is recommended by the American College of Obstetricians and Gynecologists (ACOG) in the presence of other abnormal fetal tests.

- 15-18.** Of the three umbilical artery velocimetry waveforms in this image, which is normal?
- A
  - B
  - C
  - None of the above



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- 15-19.** In the figure in question 15-18, which waveform is associated with reversed end diastolic flow (REDF)?
- A
  - B
  - C
  - None of the above
- 15-20.** Concerning middle cerebral artery (MCA) Doppler velocimetry, which of the following is true?
- It is superior to the modified BPP in forecasting pregnancy outcomes.
  - It was found inferior to amniocentesis and amniotic fluid spectral analysis for predicting fetal anemia.
  - It is useful for detection and management of fetal anemia of any cause.
  - In those with brain sparing, decreased blood flow from reduced cerebrovascular impedance is detected.
- 15-21.** Concerning ductus venosus Doppler velocimetry, which of the following is true?
- It is inferior to umbilical artery Doppler velocimetry in predicting fetal outcome.
  - REDF or absent end diastolic flow (AEDF) is an early finding in fetal hypoxemia.
  - REDF or AEDF is associated with profound fetal metabolic collapse.
  - It is currently recommended for surveillance in all growth-restricted fetuses.
- 15-22.** Concerning uterine artery Doppler velocimetry, which of the following is true?
- Vascular resistance is decreased in the first half of pregnancy.
  - It is not helpful in assessing pregnancies at high risk due to uteroplacental insufficiency.
  - Low-resistance patterns are associated with preeclampsia.
  - Low-resistance patterns have been linked to a variety of pregnancy complications.
- 15-23.** Concerning antenatal fetal testing, which of the following is true?
- It is clearly beneficial.
  - It should be considered experimental.
  - Despite its widespread use, the NST is inferior to umbilical artery Doppler velocimetry at predicting marginally poor cognitive outcomes.
  - ACOG recommends contraction stress testing as the best test to evaluate fetal well-being.

- 15-24.** During acoustic stimulation testing, which fetal response is measured?
- a.** Breathing
  - b.** Heart rate
  - c.** Eye movement
  - d.** Body movement

- 15-25.** What controls fetal heart rate accelerations?
- a.** Autonomic function at brainstem level
  - b.** Aortic baroreceptor reflexes
  - c.** Carotid baroreceptor reflexes
  - d.** Humeral factors such as atrial natriuretic peptide

**Chapter 15 Answer Key**

| Question number | Letter answer | Page cited | Header cited                 |
|-----------------|---------------|------------|------------------------------|
| 15-1            | b             | p. 334     | Introduction                 |
| 15-2            | d             | p. 334     | Introduction                 |
| 15-3            | b             | p. 335     | Fetal Movements              |
| 15-4            | c             | p. 335     | Clinical Application         |
| 15-5            | c             | p. 335     | Figure 15-2                  |
| 15-6            | a             | p. 336     | Fetal Breathing              |
| 15-7            | b             | p. 337     | Contraction Stress Testing   |
| 15-8            | b             | p. 337     | Contraction Stress Testing   |
| 15-9            | b             | p. 338     | Normal Nonstress Tests       |
| 15-10           | b             | p. 338     | Figure 15-5                  |
| 15-11           | c             | p. 339     | Abnormal Nonstress Tests     |
| 15-12           | d             | p. 340     | False-Normal Nonstress Tests |
| 15-13           | c             | p. 341     | Biophysical Profile          |

| Question number | Letter answer | Page cited | Header cited                  |
|-----------------|---------------|------------|-------------------------------|
| 15-14           | c             | p. 342     | Figure 15-9                   |
| 15-15           | a             | p. 342     | Modified Biophysical Profile  |
| 15-16           | d             | p. 343     | Doppler Velocimetry           |
| 15-17           | b             | p. 343     | Doppler Velocimetry           |
| 15-18           | a             | p. 344     | Figure 15-11                  |
| 15-19           | c             | p. 344     | Figure 15-11                  |
| 15-20           | c             | p. 344     | Middle Cerebral Artery        |
| 15-21           | c             | p. 345     | Ductus Venosus                |
| 15-22           | a             | p. 345     | Uterine Artery                |
| 15-23           | b             | p. 345     | Significance of Fetal Testing |
| 15-24           | b             | p. 340     | Acoustic Stimulation          |
| 15-25           | a             | p. 338     | Fetal Heart Acceleration      |

## CHAPTER 16

# Fetal Imaging

**16-1.** Which of the following statements is correct with regard to the relationship between tissue penetration and image resolution in sonography?

- a. Higher-frequency transducers penetrate tissue more effectively.
- b. Higher-frequency transducers yield better image resolution.
- c. Lower-frequency transducers yield better image resolution.
- d. None of the above.

**16-2.** In the first trimester of pregnancy, the most accurate predictor of gestational age is a measurement of which of the following?

- a. Gestational sac
- b. Yolk sac
- c. Crown rump length
- d. Fetal abdominal circumference

**16-3.** With transvaginal sonography, cardiac motion is usually observed when the embryo reaches what length?

- a. 3 mm
- b. 5 mm
- c. 10 mm
- d. 15 mm

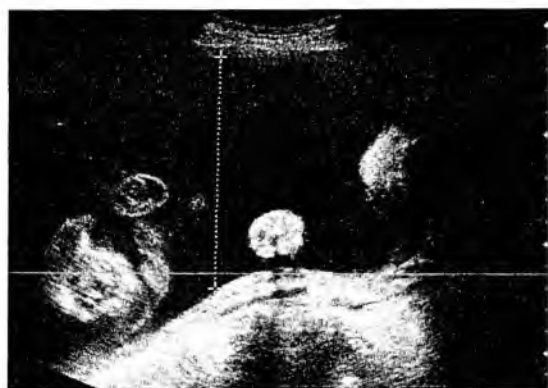
**16-4.** Which of the following biometric parameters most accurately predicts gestational age in the second trimester?

- a. Biparietal diameter
- b. Head circumference
- c. Abdominal circumference
- d. Femur length

**16-5.** A 39-year-old multipara with chronic hypertension is noted to have lagging fundal growth at 29 weeks' gestation and is referred for sonographic examination. Fetal-growth restriction is suspected based on a sonographic fetal weight estimate of less than the third percentile for this gestational age. After which interval is it appropriate to repeat the sonographic examination to evaluate for interval fetal growth?

- a. 2 days
- b. 1 week
- c. 3 weeks
- d. 5 weeks

**16-6.** This sonographic image is taken from a pregnancy in which hydramnios is suspected. If measuring the largest vertical pocket for confirmation, the distance between the two calipers must exceed which value?



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- a. 6 cm
- b. 8 cm
- c. 10 cm
- d. 12 cm

**16-7.** Adequate visualization of which of the following axial views of the fetal head is essential to exclude most anomalies of the brain that can be identified in utero?

- a. Transthalamic
- b. Transventricular
- c. Transcerebellar
- d. All of the above

- 16-8.** The following sonographic image demonstrates the normal posterior fossa structures at approximately midpregnancy. Which of the following statements is accurate regarding the relationship between the transverse cerebellar distance measured in millimeters (C) and gestational age in weeks? CM = cisterna magna.



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- a. The cerebellar diameter value is smaller than gestational age throughout pregnancy.
  - b. The cerebellar diameter value is larger than gestational age throughout pregnancy.
  - c. The cerebellar diameter value is approximately equivalent to gestational age until approximately 22 weeks, after which it is smaller than the number of weeks gestation.
  - d. The cerebellar diameter value is approximately equivalent to gestational age until approximately 22 weeks, after which it is larger than the number of weeks gestation.
- 16-9.** In what region of the fetal skull are cephaloceles most commonly identified?
- a. Occipital
  - b. Frontal
  - c. Ethmoidal
  - d. Parietal

- 16-10.** The following image demonstrates a lumbosacral meningocele in the sagittal view. Associated cranial abnormalities include all **EXCEPT** which of the following?



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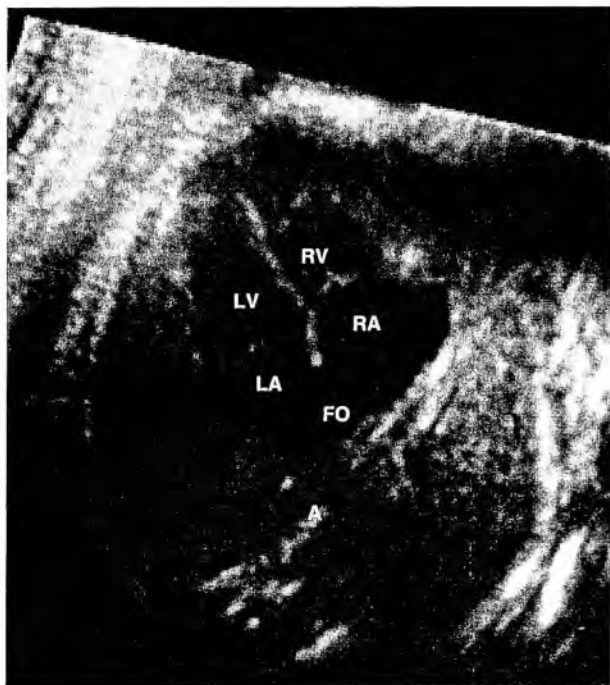
- a. Effacement of the cisterna magna
  - b. Scalping of the frontal bones
  - c. Dandy-Walker malformation
  - d. Ventriculomegaly
- 16-11.** A 21-year-old primigravida undergoes routine sonographic examination at 18 weeks' gestation. The lateral ventricular atrial measurements are 12 mm and 13 mm on the right and left sides, respectively. The evaluation of this condition should include which of the following?
- a. Amniocentesis for fetal karyotype
  - b. Targeted sonography for associated abnormalities
  - c. Testing for congenital infections
  - d. All of the above
- 16-12.** In the patient described in question 16-11, an evaluation is performed but no etiology is identified. The patient asks you what neurologic outcomes can be expected. If this finding is isolated, correct statements during your counseling include which of the following?
- a. Cognitive development will be completely normal.
  - b. Most have developmental delay.
  - c. Mental retardation is expected and can be severe.
  - d. The prognosis is highly variable, limiting the ability to predict outcome accurately.



**16-13.** If cystic hygromas are diagnosed in the first trimester, what is the most commonly associated aneuploidy?

- a. Monosomy X
- b. Trisomy 18
- c. Trisomy 21
- d. Trisomy 13

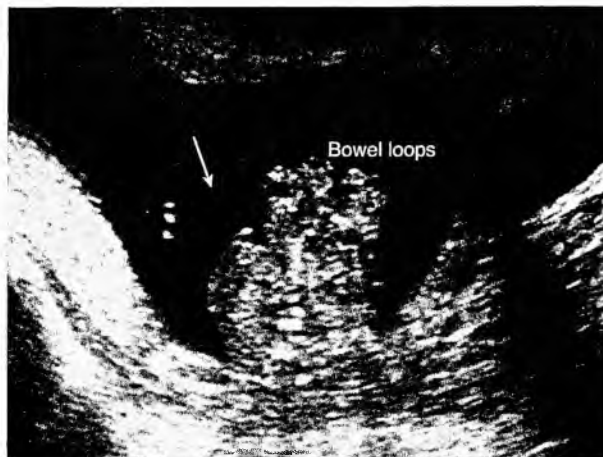
**16-14.** The following sonographic image demonstrates a normal four-chamber view of the fetal heart. Which of the following cardiac malformations may not be detected when only this view is obtained? RV = right ventricle; LV = left ventricle; RA = right atrium; LA = left atrium; FO = foramen ovale; A = aorta.



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- a. Transposition of the great vessels
- b. Hypoplastic left heart
- c. Atrioventricular septal defect (endocardial cushion defect)
- d. Ebstein anomaly

**16-15.** The following image is a transverse view of the fetal abdomen demonstrating a gastroschisis defect. Which of the following statements is true regarding this anomaly? (Arrow points to the umbilical cord insertion site.)



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- a. It is more commonly seen with advanced maternal age.
  - b. It is associated with an increased risk for aneuploidy.
  - c. There is an increased risk for fetal-growth restriction.
  - d. The survival rate is less than 50%.
- 16-16.** Compared with gastroschisis defects, omphaloceles are more likely to have which of the following?
- a. Involve the fetal liver
  - b. Be associated with aneuploidy
  - c. Be a component of a genetic syndrome
  - d. All of the above

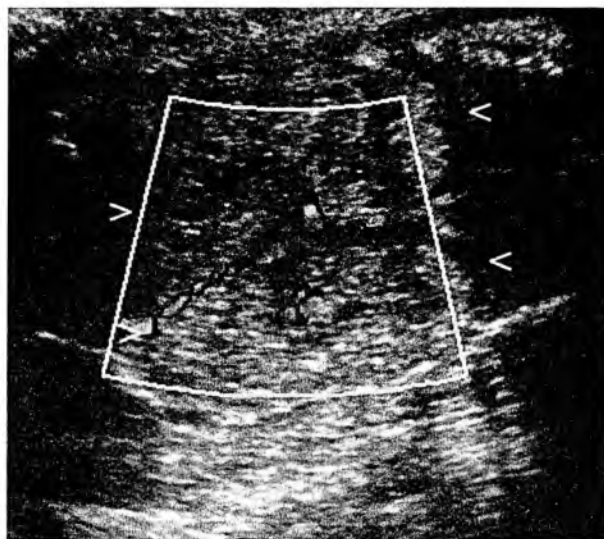
- 16-17.** A 39-year-old multipara who had a normal fetal sonographic examination at 18 weeks is referred for a second examination at 28 weeks for increased fundal height. The following image of the fetal abdomen is obtained. Which of the following statements is accurate regarding this finding?



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- a. It is usually an isolated finding.
  - b. There is no increased risk for fetal aneuploidy.
  - c. It is usually not detected prior to 24 weeks' gestation.
  - d. Hydramnios is uncommon in this setting.
- 16-18.** The production of amniotic fluid is largely from the placenta and membranes until the fetal kidneys assume this role at what gestational age?
- a. 12 weeks
  - b. 14 weeks
  - c. 18 weeks
  - d. 22 weeks

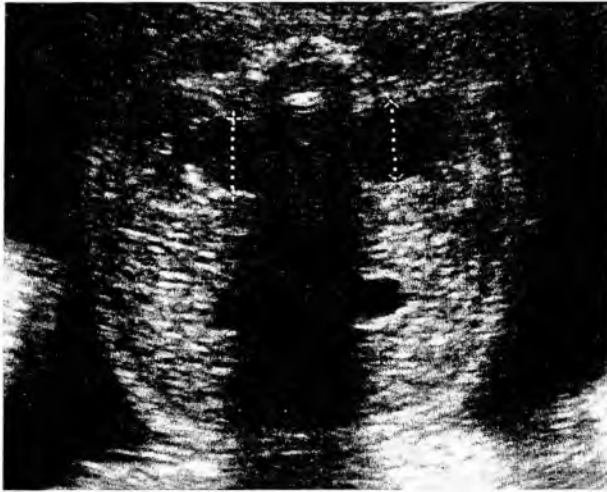
- 16-19.** The fetal kidneys seen in this sonographic image are enlarged and echogenic, consistent with a diagnosis of infantile polycystic kidney disease. What pattern of inheritance does this condition follow?



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- a. Autosomal dominant
  - b. Autosomal recessive
  - c. X-linked recessive
  - d. Polygenic
- 16-20.** What is the most common cause of neonatal hydronephrosis?
- a. Ureteropelvic junction obstruction
  - b. Collecting system duplication
  - c. Ureterovesical junction obstruction
  - d. Bladder outlet obstruction

- 16-21.** An ultrasound performed at 20 weeks' gestation demonstrates the following finding in the fetal kidneys. In addition to bilateral pyelectasis, the bladder and proximal urethra are dilated in this male fetus. What is the most likely diagnosis?

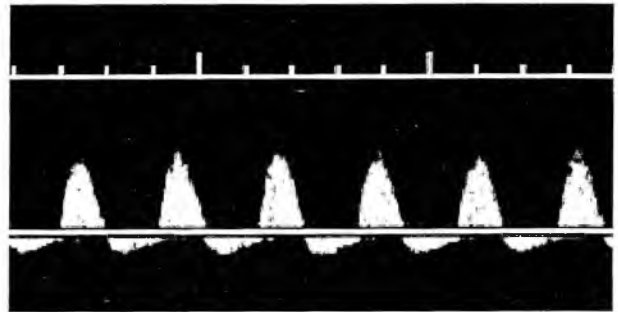


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- a. Urethral atresia
  - b. Posterior urethral valves
  - c. Ureterovesical junction obstruction
  - d. Ectopic ureterocele
- 16-22.** Compared with traditional 2-D sonography, 3- and 4-D sonography are superior in which of the following regards?
- a. Improved detection of neural-tube defects
  - b. More accurate for fetal echocardiography
  - c. Better characterization of placenta and umbilical cord anomalies
  - d. None of the above

- 16-23.** The umbilical artery systolic to diastolic ratio (S/D ratio) changes in what way throughout pregnancy?
- a. It increases with advancing gestation.
  - b. It decreases with advancing gestation.
  - c. It remains approximately constant.
  - d. It follows a variable and unpredictable pattern.

- 16-24.** A 21-year-old primigravida at 34 weeks' gestation is referred for suspected fetal-growth restriction. An umbilical artery Doppler study is performed and the following waveform is obtained. What is the most appropriate management plan?



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- a. Outpatient follow-up in 1 week
  - b. Biophysical profile
  - c. Amniocentesis for fetal lung maturity
  - d. Expedited delivery
- 16-25.** Middle cerebral artery velocimetry is most useful as an adjunct to sonography in which clinical situation?
- a. Suspected fetal anemia
  - b. Fetal-growth restriction
  - c. Intracranial anomalies
  - d. All of the above

**Chapter 16 Answer Key**

| Question number | Letter answer | Page cited | Header cited                      |
|-----------------|---------------|------------|-----------------------------------|
| <b>16-1</b>     | <b>b</b>      | p. 349     | Sonography in Obstetrics          |
| <b>16-2</b>     | <b>c</b>      | p. 350     | Sonography in Obstetrics          |
| <b>16-3</b>     | <b>b</b>      | p. 351     | Sonography in Obstetrics          |
| <b>16-4</b>     | <b>a</b>      | p. 352     | Sonography in Obstetrics          |
| <b>16-5</b>     | <b>c</b>      | p. 353     | Sonography in Obstetrics          |
| <b>16-6</b>     | <b>b</b>      | p. 353     | Sonography in Obstetrics          |
| <b>16-7</b>     | <b>d</b>      | p. 354     | Normal and Abnormal Fetal Anatomy |
| <b>16-8</b>     | <b>d</b>      | p. 354     | Normal and Abnormal Fetal Anatomy |
| <b>16-9</b>     | <b>a</b>      | p. 354     | Normal and Abnormal Fetal Anatomy |
| <b>16-10</b>    | <b>c</b>      | p. 355     | Normal and Abnormal Fetal Anatomy |
| <b>16-11</b>    | <b>d</b>      | p. 355     | Normal and Abnormal Fetal Anatomy |
| <b>16-12</b>    | <b>d</b>      | p. 355     | Normal and Abnormal Fetal Anatomy |
| <b>16-13</b>    | <b>c</b>      | p. 356     | Normal and Abnormal Fetal Anatomy |
| <b>16-14</b>    | <b>a</b>      | p. 357     | Normal and Abnormal Fetal Anatomy |

| Question number | Letter answer | Page cited | Header cited                      |
|-----------------|---------------|------------|-----------------------------------|
| <b>16-15</b>    | <b>c</b>      | p. 358     | Normal and Abnormal Fetal Anatomy |
| <b>16-16</b>    | <b>d</b>      | p. 359     | Normal and Abnormal Fetal Anatomy |
| <b>16-17</b>    | <b>c</b>      | p. 359     | Normal and Abnormal Fetal Anatomy |
| <b>16-18</b>    | <b>c</b>      | p. 360     | Normal and Abnormal Fetal Anatomy |
| <b>16-19</b>    | <b>b</b>      | p. 360     | Normal and Abnormal Fetal Anatomy |
| <b>16-20</b>    | <b>a</b>      | p. 360     | Normal and Abnormal Fetal Anatomy |
| <b>16-21</b>    | <b>b</b>      | p. 361     | Normal and Abnormal Fetal Anatomy |
| <b>16-22</b>    | <b>d</b>      | p. 361     | 3- and 4-Dimensional Sonography   |
| <b>16-23</b>    | <b>b</b>      | p. 363     | Doppler                           |
| <b>16-24</b>    | <b>d</b>      | p. 363     | Doppler                           |
| <b>16-25</b>    | <b>a</b>      | p. 365     | Doppler                           |

SECTION 4

# LABOR AND DELIVERY



## CHAPTER 17

# Normal Labor and Delivery

**17-1.** This image demonstrates a fetus in what position?



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- a. Vertex
- b. Sinciput
- c. Face
- d. Brow

**17-2.** After cephalic, the most common fetal position is which of the following?

- a. Breech
- b. Transverse lie
- c. Brow
- d. Face

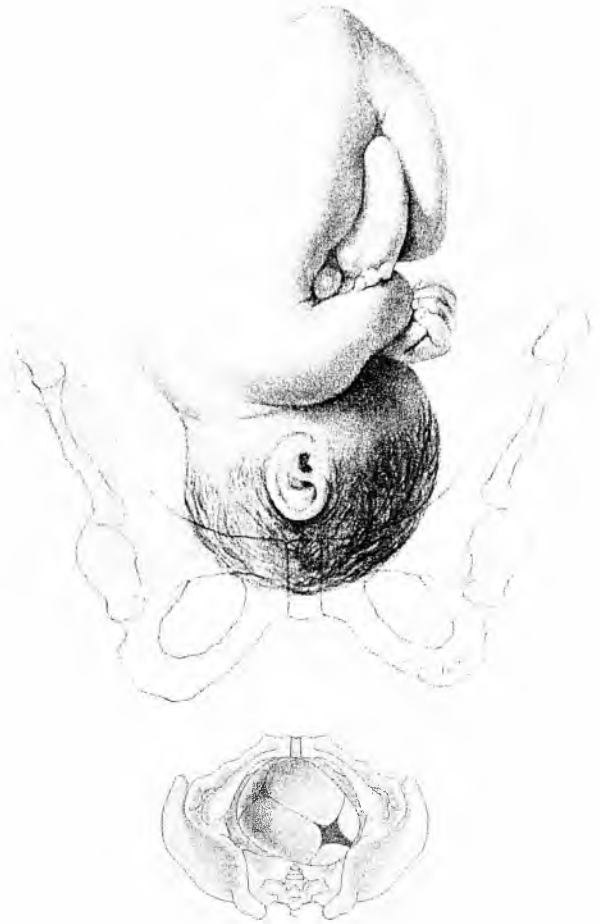
**17-3.** In shoulder presentations, the portion of the fetus chosen for orientation with the maternal pelvis is which of the following?

- a. Head
- b. Breech
- c. Umbilicus
- d. Scapula

**17-4.** Which of the following could inhibit performance of Leopold maneuvers?

- a. Maternal obesity
- b. Oligohydramnios
- c. Posterior placenta
- d. Supine positioning

**17-5.** The figure below represents a fetal head in which position?



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- a. Left occiput posterior (LOP)
- b. Right occiput anterior (ROA)
- c. Left occiput anterior (LOA)
- d. Right occiput posterior (ROP)

- 17-6. On palpation of the fetal head during vaginal examination, it is noted that the sagittal suture is transverse and close to the pubic symphysis. The posterior ear can be easily palpated. This is called which of the following?
- Mentoanterior position
  - Anterior asynclitism
  - Mentoposterior position
  - Posterior asynclitism

- 17-7. You deliver a woman vaginally after a long labor. A photograph of the baby is provided. Which of the following is most often correct?



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- The caput and molding present will resolve by 1 year of life.
  - The caput and molding present will resolve within a week.
  - The edema present can be an early warning of cerebral palsy.
  - The fluid collection at the top of the head will require drainage.
- 17-8. Which of the following statements about the preparatory division of the first stage of labor is true?
- Cervical dilatation is the most rapid.
  - It is also referred to as the active phase of labor.
  - It is unaffected by sedation or conduction analgesia.
  - Connective tissue components of the cervix change considerably.
- 17-9. In the setting of painful contractions but intact membranes, which of the following cervical dilatations are presumed to be a reasonably reliable threshold for the diagnosis of labor?
- 1–2 cm
  - 3–4 cm
  - 5–6 cm
  - 7–8 cm
- 17-10. A term primigravida presents with contractions at 1 cm dilatation. She is uncomfortable and upset. You sedate the patient. Six hours later, she has made no cervical change, and the contractions have abated. Which of the following is the likely diagnosis?
- Arrest of dilatation
  - Prolonged latent phase
  - False labor
  - Protracted labor
- 17-11. The stage of labor that begins when cervical dilatation is complete and ends with delivery of the fetus is which of the following?
- First stage
  - Second stage
  - Third stage
  - Fourth stage
- 17-12. A 20-year-old G1P0 at 37 weeks' gestation presents to triage complaining of fluid leakage. A speculum examination is performed, and a small amount of watery discharge is identified in the vault. Nitrazine paper indicates a pH of 7. Another reliable test includes which of the following?
- Microscopy to detect arborization or ferning of fluid
  - Sonography to assess amniotic fluid volume
  - Indigo carmine injection into the amniotic sac
  - Methylene blue injection into the amniotic sac
- 17-13. A patient in active labor is noted to be 75% effaced. Her cervical length approximates which of the following?
- 4 cm
  - 3 cm
  - 2 cm
  - 1 cm
- 17-14. Which of the following statements regarding labor management is true?
- Maternal vitals should be evaluated every 15 minutes.
  - Periodic pelvic examination should be performed at 1 hour intervals.
  - Fetal heart rate should be checked during a contraction once per hour.
  - Food should be withheld during active labor and delivery.
- 17-15. Which of the following is a risk factor for postpartum urinary retention?
- Multiparity
  - Labor <10 hours in duration
  - Labor augmentation
  - Not being catheterized during labor

- 17-16.** The advantage of the Ritgen maneuver is which of the following?
- It favors neck flexion.
  - It decreases the likelihood of a third-degree laceration.
  - It prevents shoulder dystocia.
  - It allows controlled delivery of the head.
- 17-17.** A close friend with a nervous nature who is pregnant calls you with concerns that the baby will be “strangled” by the umbilical cord. You respond to her most appropriately with which of the following?
- That’s worrisome. I’ll check for you with sonography.
  - A nuchal cord occurs in 25% of deliveries and usually causes no harm.
  - I understand your fear. Nuchal cord is a serious contributor to perinatal mortality.
  - You shouldn’t think about it because a nuchal cord is rare.
- 17-18.** Delaying cord clamping by 3 minutes has been encouraged by some because it provides an additional 80 mL of blood to the neonate. The possible disadvantage of this includes which of the following?
- Exsanguination
  - Hyperbilirubinemia
  - Hypoglycemia
  - Meconium aspiration syndrome
- 17-19.** Which of the following is a sign of placental separation?
- Sudden gush of blood
  - Umbilical cord appears to shorten
  - Uterus shrinks down as the placenta moves into the lower uterine segment
  - Uterus softens
- 17-20.** Which of the following is a physiologic change associated with an intravenous bolus of oxytocin?
- Increased blood pressure
  - Decreased cardiac output
  - Increased heart rate
  - Increased body temperature
- 17-21.** Which of the following is true about oxytocin?
- It is as effective orally as it is intravenously.
  - It is a powerful diuretic that could cause dehydration in large doses.
  - The half-life with intravenous infusion is 3 minutes.
  - Oxytocin should not be given prior to delivery of the placenta because this could prolong the third stage of labor.
- 17-22.** You are asked by a flight attendant to assist in delivering a woman’s term fetus while aboard an airplane. The baby and placenta are delivered without incident. You determine the woman has uterine atony despite massage. In the absence of any medications, which of the following is a reasonable next step?
- Have the patient consume a large quantity of water
  - Pack her vagina with an available T-shirt
  - Suggest nipple stimulation
  - Place a tourniquet at her waist
- 17-23.** Intravenous administration of ergot alkaloids should be avoided because it can initiate which of the following?
- Anaphylaxis
  - Transient bronchoconstriction
  - Bleeding
  - Transient hypertension
- 17-24.** Which statement regarding episiotomy is true?
- Its use has increased over the past 25 years.
  - It increases the incidence of anal sphincter tears.
  - It is recommended for all women delivering their first baby vaginally.
  - It decreases the incidence of postpartum incontinence.
- 17-25.** The following image represents what type of laceration?



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- First degree
- Second degree
- Third degree
- Fourth degree



17-26. The following image represents what type of laceration?



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- a. First degree
  - b. Second degree
  - c. Third degree
  - d. Fourth degree
- 17-27. Approximately 10% of third- and fourth-degree lacerations are complicated by wound disruption. The best predictor of wound disruption is which of the following?
- a. Use of mediolateral episiotomy
  - b. Extent of laceration
  - c. Race
  - d. Need for an instrumented delivery
- 17-28. Which of the following is associated with third- and fourth-degree lacerations?
- a. Multiparity
  - b. Occiput anterior position
  - c. Use of mediolateral episiotomy
  - d. Arrest of the second stage of labor
- 17-29. When considering the timing of an episiotomy, which of the following statements is correct?
- a. If the episiotomy is cut too early, there can be excessive blood loss.
  - b. If the episiotomy is cut late, lacerations will still likely occur.
  - c. In the setting of a forceps delivery, episiotomy is performed after placement of the blades.
  - d. All of the above.
- 17-30. Compared with mediolateral episiotomy, the main drawback of midline episiotomy is which of the following?
- a. Surgical repair is more difficult.
  - b. It is more likely to break down.
  - c. There is increased blood loss.
  - d. It is more likely to extend into a third- or fourth-degree laceration.
- 17-31. Which of the following suture materials would be the best choice for repairing an episiotomy?
- a. 2-0 Chromic catgut
  - b. 4-0 Polyglactin
  - c. 0 PDS
  - d. 2-0 Silk
- 17-32. Following repair of a fourth-degree laceration, which of the following should be avoided in the postpartum period?
- a. Stool softeners
  - b. Antibiotics
  - c. Enemas
  - d. Ice packs to the perineum
- 17-33. Evidence has consistently shown that the advantage of the active management of labor is which of the following?
- a. It shortens the duration of labor.
  - b. It increases patient satisfaction.
  - c. It decreases the rate of cesarean delivery.
  - d. It decreases the occurrence of a nonreassuring fetal heart rate tracing.
- 17-34. A woman at term with a singleton, low-risk pregnancy is admitted for labor at 4 cm dilatation. Two hours later, the patient has made no cervical change. According to the Parkland Hospital labor management protocol, which of the following is the next step?
- a. Oxytocin
  - b. Amniotomy
  - c. Intrauterine pressure catheter placement
  - d. Cesarean delivery

## Chapter 17 Answer Key

| Question number | Letter answer | Page cited | Header cited                                         | Question number | Letter answer | Page cited | Header cited                    |
|-----------------|---------------|------------|------------------------------------------------------|-----------------|---------------|------------|---------------------------------|
| 17-1            | c             | p. 375     | Figure 17-1                                          | 17-17           | b             | p. 397     | Nuchal Cord                     |
| 17-2            | a             | p. 375     | Fetal Presentation                                   | 17-18           | b             | p. 397     | Clamping the Cord               |
| 17-3            | d             | p. 376     | Varieties of Presentations and Positions             | 17-19           | a             | p. 397     | Signs of Placental Separation   |
| 17-4            | a             | p. 377     | Abdominal Palpation-Leopold Maneuvers                | 17-20           | c             | p. 399     | Oxytocin                        |
| 17-5            | b             | p. 378     | Figure 17-4                                          | 17-21           | c             | p. 399     | Oxytocin                        |
| 17-6            | d             | p. 379     | Engagement                                           | 17-22           | c             | p. 399     | Oxytocin                        |
| 17-7            | b             | p. 382     | Figure 17-19, Changes in the Shape of the Fetal Head | 17-23           | d             | p. 399     | Ergonovine and Methylergonovine |
| 17-8            | d             | p. 384     | Characteristics of Normal Labor                      | 17-24           | b             | p. 401     | Episiotomy                      |
| 17-9            | b             | p. 384     | Characteristics of Normal Labor                      | 17-25           | c             | p. 400     | Figure 17-34                    |
| 17-10           | c             | p. 388     | Latent Phase                                         | 17-26           | a             | p. 400     | Figure 17-34                    |
| 17-11           | b             | p. 389     | Second Stage of Labor                                | 17-27           | a             | p. 401     | Laceration Risks and Morbidity  |
| 17-12           | a             | p. 392     | Detection of Ruptured Membranes                      | 17-28           | d             | p. 401     | Laceration Risks and Morbidity  |
| 17-13           | d             | p. 392     | Cervical Examination                                 | 17-29           | d             | p. 401     | Timing of Episiotomy            |
| 17-14           | d             | p. 393     | Management of the First Stage of labor               | 17-30           | d             | p. 402     | Table 17-5                      |
| 17-15           | c             | p. 394     | Urinary Bladder Function                             | 17-31           | a             | p. 402     | Episiotomy Repair               |
| 17-16           | d             | p. 395     | Delivery of the Head                                 | 17-32           | c             | p. 404     | Episiotomy Repair               |
|                 |               |            |                                                      | 17-33           | a             | p. 406     | Active Management of Labor      |
|                 |               |            |                                                      | 17-34           | b             | p. 406     | Figure 17-37                    |

## CHAPTER 18

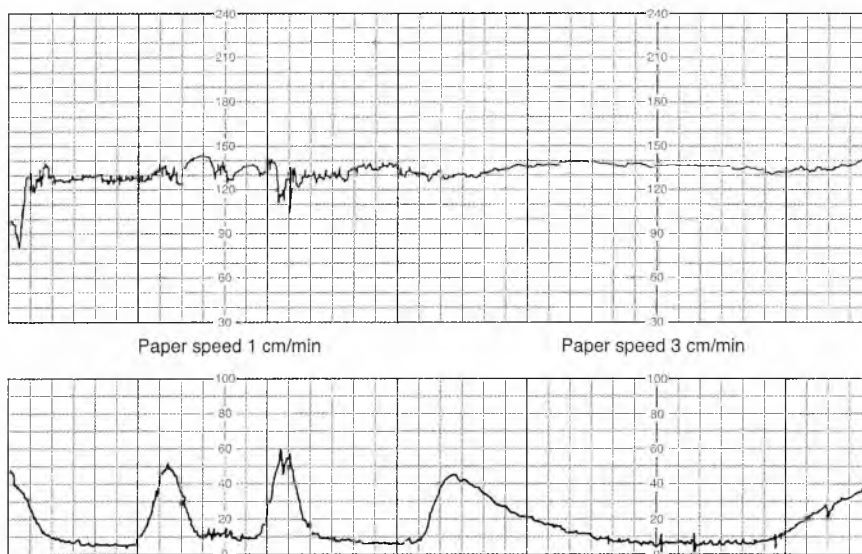
# Intrapartum Assessment

**18-1.** Currently, in obstetrics, which of the following is the most prevalent obstetrical procedure?

- a. Cesarean delivery
- b. Intrauterine pressure catheter placement
- c. Fetal monitoring
- d. Episiotomy

**18-4.** Shown in the figure below, which paper speed reflects the unambiguous standard paper speed recommended by the National Institute of Child Health and Human Development Workshop (NICHD) in 1997?

- a. 1 cm/min
- b. 5 cm/min
- c. 3 cm/min
- d. None of the above



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**18-2.** Which peak wave voltage is the portion of the fetal electrocardiogram that is most reliably detected?

- a. P-wave
- b. R-wave
- c. QRS complex
- d. T-wave

**18-3.** During external ultrasound Doppler, reflected ultrasound signals from moving fetal heart valves are analyzed through a microprocessor, which compares incoming signals with the most recent previous signal. This process is called which of the following?

- a. Synchrony
- b. Correlation
- c. Transduction
- d. Autocorrelation

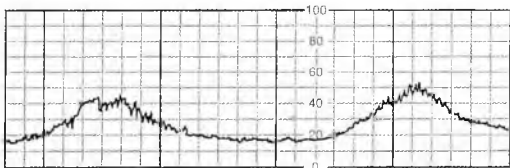
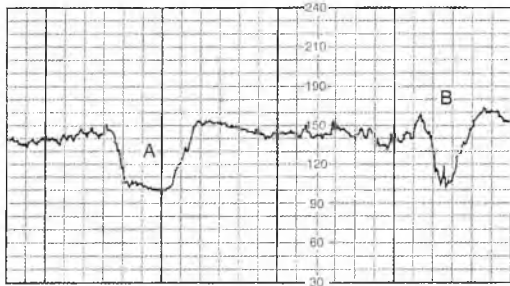
**18-5.** With increasing fetal maturation, the baseline fetal heart rate (FHR) changes in which of the following ways?

- a. Increased rate with decreasing variability
- b. Decreased rate with increasing variability
- c. Increased rate with increasing variability
- d. Decreased rate with decreasing variability

**18-6.** Diminished variability in the FHR most likely represents which of the following?

- a. Hypoglycemia
- b. Hypoxia
- c. Hypercarbia
- d. Acidemia

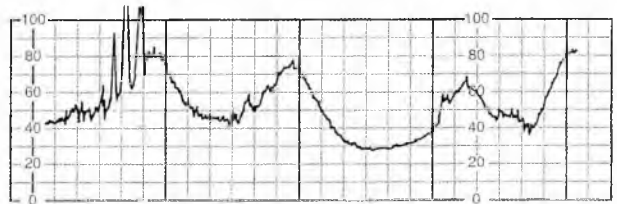
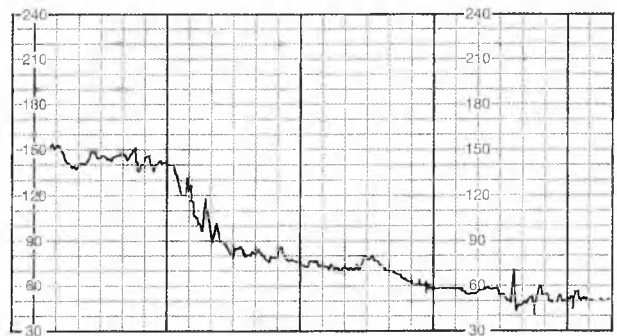
- 18-7.** Which of the following is not a cause of decreased beat-to-beat FHR variability?
- Diphenhydramine
  - Meperidine
  - Butorphanol
  - Diabetic ketoacidosis
- 18-8.** Which of the following is the most common fetal arrhythmia seen intrapartum?
- Atrial tachycardia
  - Sinus bradycardia
  - Ventricular extrasystoles
  - Atrial extrasystoles
- 18-9.** Which of the following is the most common periodic FHR change?
- Early deceleration
  - Acceleration
  - Variable deceleration
  - Late deceleration
- 18-10.** Which of the following describe early decelerations?
- Common during the active phase of labor
  - Abrupt decrease (<30 seconds) to nadir
  - Are associated with low Apgar scores
  - Return to baseline slowly prior to the end of a contraction
- 18-11.** The FHR changes shown in the top panel of this image are characteristic of which of the following?



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- Late decelerations
- Early decelerations
- Variable decelerations
- Variable decelerations with rebound tachycardia

- 18-12.** Partial or complete cord occlusion leads to variable decelerations by which of the following mechanisms?
- Increase in afterload (baroreceptor) followed by sudden increase in fetal arterial oxygen content (chemoreceptor)
  - Decrease in afterload followed by an increase in fetal arterial oxygen content
  - Increase in afterload followed by a decrease in fetal arterial oxygen content
  - Decrease in afterload followed by a decrease in fetal arterial oxygen content
- 18-13.** If paper speed is 1 cm/min, this FHR tracing depicts which of the following?



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- Prolonged deceleration
  - Late deceleration
  - Early deceleration
  - None of the above
- 18-14.** During late decelerations, which of the following is true regarding the FHR nadir?
- It is reached abruptly (<30 seconds), and FHR recovers to baseline after the contraction.
  - It is usually associated with accelerations.
  - It is rarely more than 30–40 beats per minute in magnitude.
  - It is reached gradually and occurs at the contraction peak, and FHR recovers to baseline after the contraction.

- 18-15.** Approximately what percentage of labors lack second-stage decelerations?
- 1%
  - 10%
  - 20%
  - 30%
- 18-16.** Which of the following is true of continuous fetal monitoring?
- It improves fetal outcome compared with intermittent auscultation.
  - It provides an unbiased record of FHR during labor and delivery.
  - It decreases cesarean delivery rates.
  - It is employed in approximately 70% of obstetric units in the United States.
- 18-17.** Which of the following is true of fetal scalp pH sampling?
- It is associated with a decreased cesarean delivery rate.
  - It is commonly employed as an adjunct to continuous fetal monitoring.
  - If the scalp pH is below 7.20, another scalp blood sample is collected immediately, and the mother is moved to the operating room and prepared for surgery.
  - It is advantageous over lactate sampling because of a higher procedural success rate.
- 18-18.** This ST-segment waveform analysis suggests which of the following?



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- Metabolic acidemia
  - Hypocarbica
  - Progressive fetal hypoxia
  - Normal ST-segment waveform change during latent labor
- 18-19.** Concerning the 2008 NICHD definitions for FHR tracing interpretation, which of the following is true?
- FHR patterns are categorized into a three-tiered system.
  - Category 1 includes marked baseline variability.
  - Category 3 includes minimal baseline variability.
  - All of the above.
- 18-20.** Which of the following is true of meconium in the amniotic fluid?
- It is found during 23–35% of labors.
  - It is associated with hypocarbica.
  - It is associated with hypercarbica that usually presents as metabolic acidosis.
  - It is associated with acute events that are reflected by hypercarbica.
- 18-21.** Initial evaluation and treatment of nonreassuring FHR patterns includes which of the following?
- Moving the woman to a supine position
  - Administering terbutaline subcutaneously to halt contractions
  - Examining the woman to exclude cord prolapse
  - Decreasing the oxytocin dosage by half
- 18-22.** Amnioinfusion is associated with which of the following?
- No change in FHR pattern
  - Decreased meconium aspiration syndrome rate
  - Increased cesarean delivery rate
  - No differences in overall cesarean delivery rates, delivery for fetal distress, or umbilical gas studies when done for prophylaxis in cases of oligohydramnios
- 18-23.** The American College of Obstetricians and Gynecologists specifies that hypoxic ischemic encephalopathy due to profound intrapartum hypoxia should also show other signs of damage that includes which of the following?
- pH < 7.1
  - Base deficit > 18 mmol/L
  - Apgar scores of 0–5 beyond 5 minutes
  - None of the above
- 18-24.** Clinical studies of intrapartum continuous fetal monitoring (CFM) show which of the following outcomes?
- Increased cesarean delivery rate
  - Decreased incidence of neonatal seizures
  - No difference in neonatal neurologic outcome when CFM compared with intermittent auscultation
  - All of the above

18-25. External tocodynamometer monitoring can reliably reveal all **EXCEPT** which of the following regarding contractions?

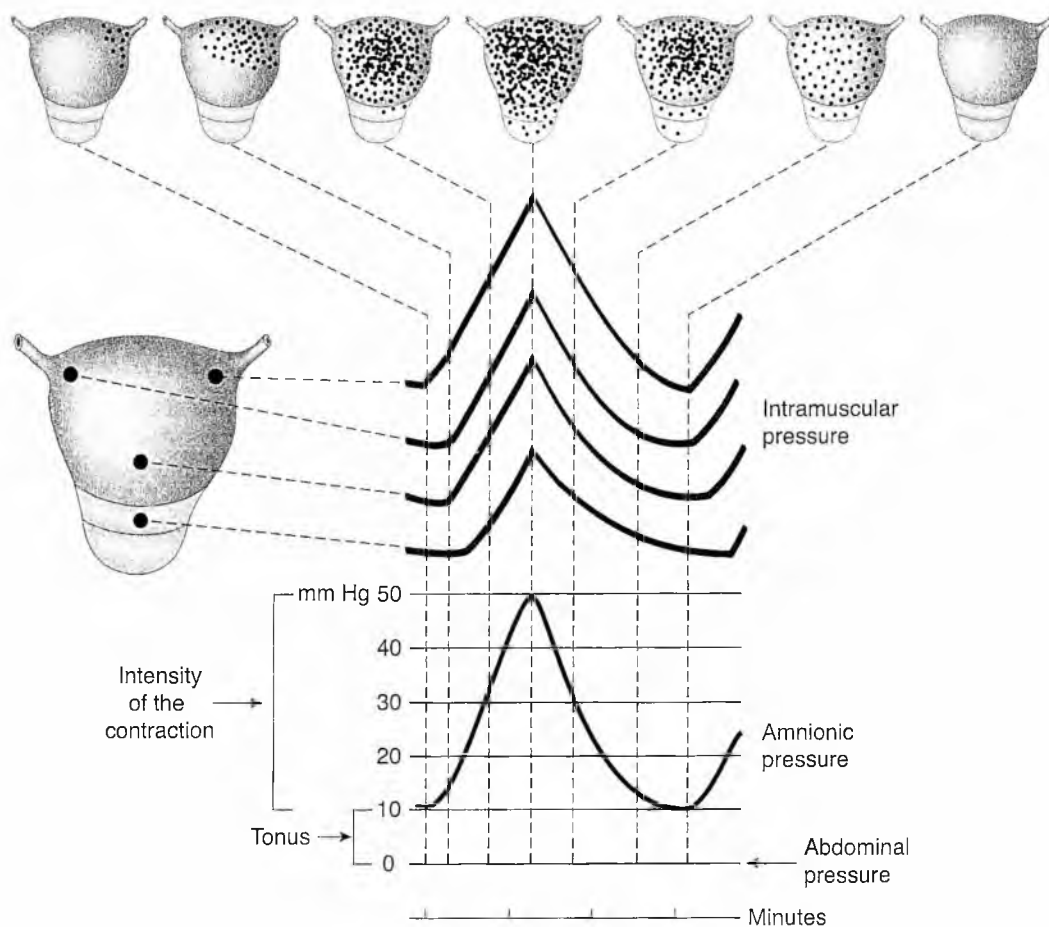
- a. Onset
- b. Frequency
- c. Strength
- d. Resolution

18-26. Clinical labor usually commences when uterine activity reaches which of the following levels of Montevideo units (MVU)?

- a. 200 MVU
- b. 160 MVU
- c. 140 MVU
- d. 80-120 MVU

18-27. Concerning uterine contraction propagation, this figure depicts which of the following?

- a. Contractions spread multifocally and culminate dyssynchronously.
- b. The depolarization wave propagates down toward the cervix.
- c. Contraction intensity is greatest in the lower uterine segment.
- d. All of the above.



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**Chapter 18 Answer Key**

| Question number | Letter answer | Page cited | Header cited                                           | Question number | Letter answer | Page cited | Header cited                                                               |
|-----------------|---------------|------------|--------------------------------------------------------|-----------------|---------------|------------|----------------------------------------------------------------------------|
| 18-1            | c             | p. 410     | Introduction                                           | 18-17           | c             | p. 426     | Interpretation                                                             |
| 18-2            | b             | p. 410     | Internal Electronic Monitoring                         | 18-18           | c             | p. 429     | Figure 18-30                                                               |
| 18-3            | d             | p. 412     | External (Indirect) Electronic Monitoring              | 18-19           | a             | p. 430     | National Institutes of Health Workshops on Definitions and Interpretations |
| 18-4            | c             | p. 412     | Fetal Heart Rate Patterns                              | 18-20           | d             | p. 431     | Meconium in the Amnionic Fluid                                             |
| 18-5            | b             | p. 412     | Rate                                                   | 18-21           | c             | p. 432     | Management of Options                                                      |
| 18-6            | d             | p. 417     | Decreased Variability                                  | 18-22           | d             | p. 433     | Amnioinfusion for Meconium Stained Amnionic Fluid                          |
| 18-7            | a             | p. 417     | Decreased Variability                                  | 18-23           | d             | p. 435     | Human Evidence                                                             |
| 18-8            | d             | p. 417     | Cardiac Arrhythmia                                     | 18-24           | d             | p. 436     | Summary of Randomized Studies                                              |
| 18-9            | b             | p. 420     | Early Deceleration                                     | 18-25           | c             | p. 437     | External Monitoring                                                        |
| 18-10           | a             | p. 420     | Early Deceleration                                     | 18-26           | d             | p. 437     | Patterns of Uterine Activity                                               |
| 18-11           | c             | p. 423     | Figure 18-21                                           | 18-27           | b             | p. 439     | Figure 18-34                                                               |
| 18-12           | c             | p. 423     | Variable Decelerations                                 |                 |               |            |                                                                            |
| 18-13           | a             | p. 424     | Figure 18-24                                           |                 |               |            |                                                                            |
| 18-14           | c             | p. 421     | Late Decelerations                                     |                 |               |            |                                                                            |
| 18-15           | a             | p. 425     | Fetal Heart Rate Patterns During Second Stage of Labor |                 |               |            |                                                                            |
| 18-16           | b             | p. 426     | Admission Fetal Monitoring in Low Risk Pregnancies     |                 |               |            |                                                                            |

## CHAPTER 19

# Obstetrical Anesthesia

**19-1.** Obstetrical anesthesia should be administered to which of the following groups?

- a. All patients with heart disease
- b. All patients with gestational diabetes
- c. All patients with severe preeclampsia
- d. Any woman who requests it and has no contraindication to its administration

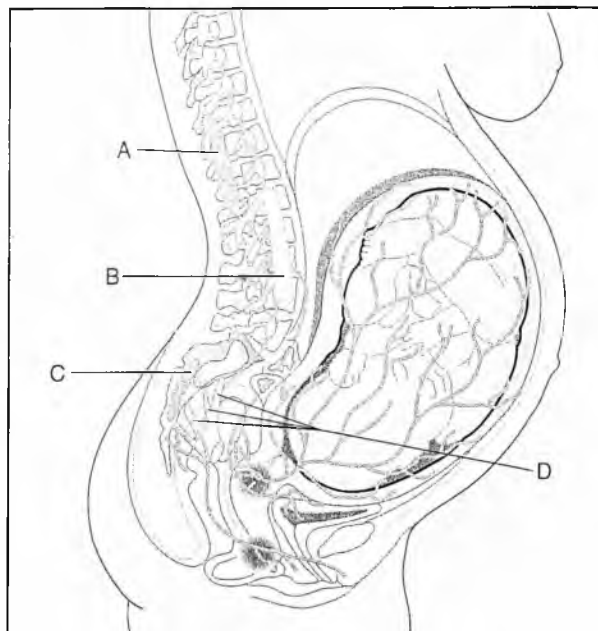
**19-2.** Which parenteral anesthetic agent has the shortest neonatal half-life?

- a. Morphine
- b. Nalbuphine
- c. Meperidine
- d. Butorphanol

**19-3.** Naloxone may not be administered to which of the following patients?

- a. Mothers with severe preeclampsia
- b. Mothers with respiratory depression
- c. Newborns of narcotic-addicted mothers
- d. Mothers who have just received IV morphine

**19-4.** In this figure, which sensory block level would provide the best analgesia during early labor?



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- a. A
- b. B
- c. C
- d. D

**19-5.** Pain during the actual birthing process is derived primarily from which of the following?

- a. Ischial nerve
- b. Pudendal nerve
- c. Hypogastric nerve
- d. Frankenhäuser ganglion



19-6. The following image shows a needle passing through what structure to reach the pudendal nerve?

- a. Sacral ligament
- b. Ischial ligament
- c. Pudendal ligament
- d. Sacrospinous ligament

19-8. Symptoms of toxicities seen in the IV administration of anesthetic agents meant to be administered in a spinal block include which of the following?

- a. Seizures and loss of consciousness
- b. Hypotension and cardiac arrhythmia
- c. Hypertension and tachycardia
- d. All of the above



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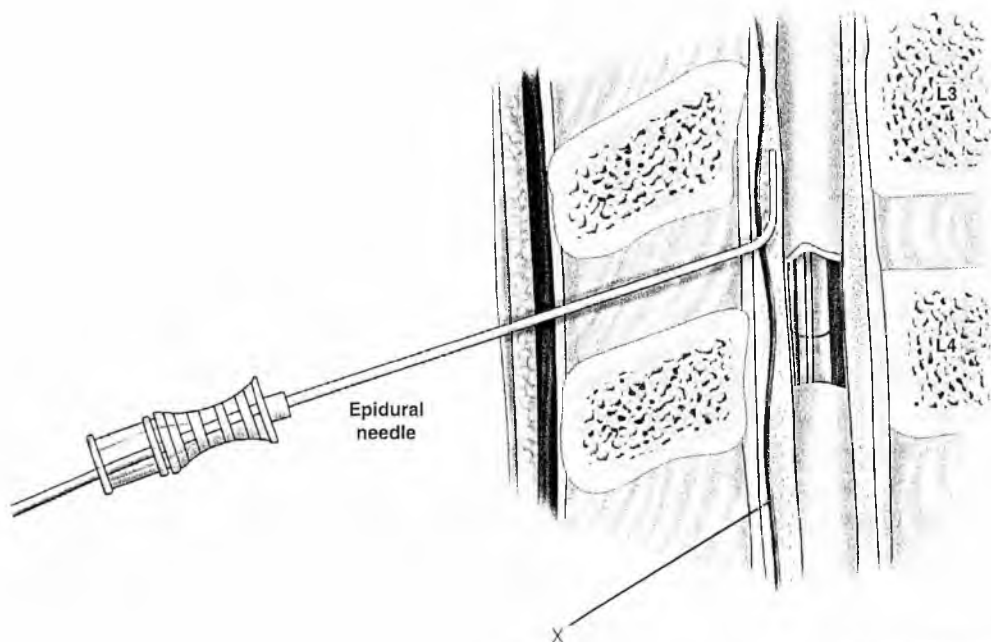
19-7. What is the reasoning behind adding dilute epinephrine to an epidural test dose?

- a. To constrict blood vessels in the epidural space
- b. To aid in determining whether the test dose was injected intravenously
- c. To decrease the chances that the anesthetic agent is injected intravenously
- d. None of the above

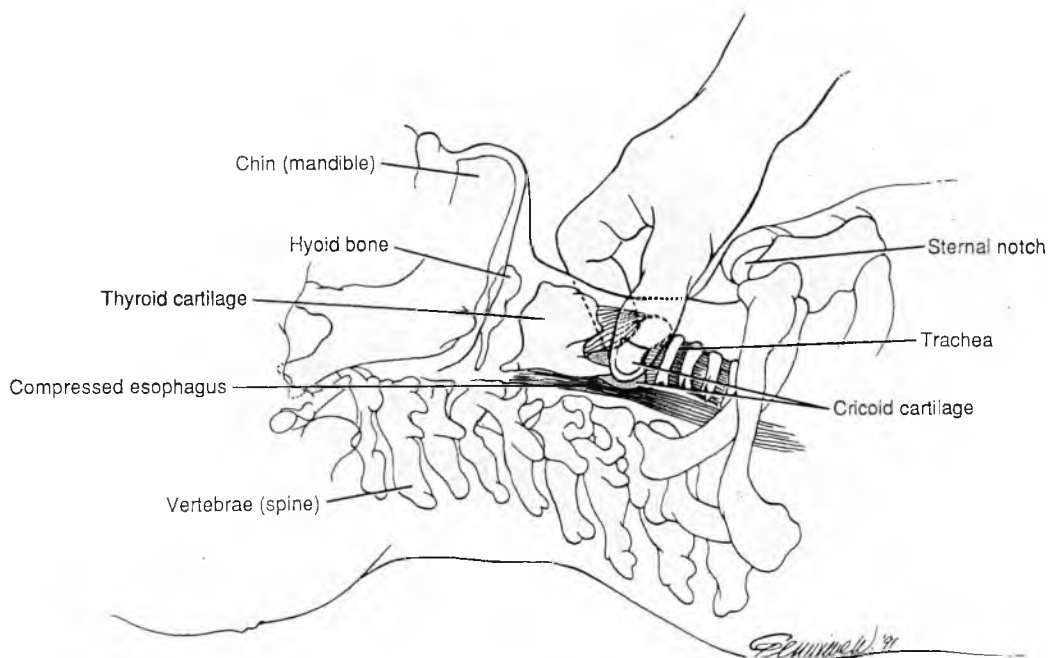
19-9. Of the following regional anesthetics, which is the most likely to provide adequate pain relief for the entire duration of labor?

- a. Spinal block
- b. Epidural block
- c. Pudendal block
- d. Paracervical block

- 19-10.** Which of the following is accurate regarding spinal blockade to the level of the umbilicus?
- It corresponds to the T6 dermatome.
  - It is adequate for a cesarean delivery.
  - It is adequate for vaginal or forceps delivery.
  - All of the above.
- 19-11.** What is the main reason why glucose is added to the anesthetic agent chosen for spinal blockade?
- To create a hyperbaric solution
  - To create a hypertonic solution
  - To minimize hypotension associated with spinal blockade
  - To supply calories to women in labor
- 19-12.** Postdural puncture headache is most common with which of the following?
- Spinal blockade
  - Epidural anesthesia
  - Combined spinal-epidural
  - Both combined spinal-epidural and spinal blockade
- 19-13.** In the obstetrical setting, the initial resuscitative measures for the treatment of hypotension secondary to spinal blockade may include which of the following?
- Ephedrine
  - Phenylephrine
  - Left lateral decubitus and IV hydration
  - All of the above
- 19-14.** To prevent postdural headache, which of the following intervention may be effective?
- Vigorous intravenous prehydration
  - Prophylactic blood patch
  - Use of a smaller gauge needle
  - Positioning the patient supine throughout labor
- 19-15.** Contraindications to regional anesthesia include all **EXCEPT** which of the following?
- Scoliosis
  - Maternal coagulopathy
  - Skin infection at the planned needle placement site
  - Use of low-molecular-weight heparin in the prior 6 hours
- 19-16.** In the setting of preeclampsia, the following anesthetics can be utilized in which order of decreasing preference?
- General > epidural > spinal
  - Epidural = spinal > general
  - Epidural > spinal > general
  - Spinal > epidural > general
- 19-17.** The structure labeled X in this figure represents which of the following?
- Dura mater
  - Epidural space
  - Ligamentum flavum
  - Internal venous plexus



- 19-18. All **EXCEPT** which of the following may influence the spread of anesthesia after epidural placement?
- Anesthetic dose
  - Maternal position
  - Type of catheter used
  - Location of catheter tip
- 19-19. What is the most common complication encountered during epidural anesthesia?
- Fever
  - Hypotension
  - Total spinal blockade
  - Ineffective analgesia
- 19-20. Epidural analgesia is known to cause all **EXCEPT** which of the following?
- Prolonged first-stage labor
  - Prolonged second-stage labor
  - Increased risk of forceps delivery
  - Increased risk of cesarean delivery
- 19-21. Thrombocytopenia may prevent a patient from receiving epidural anesthesia if platelets number less than which of the following?
- 50,000
  - 75,000
  - 100,000
  - 150,000
- 19-22. An epidural anesthetic may be given to which laboring women?
- Those with a prolonged aPTT
  - Those receiving therapeutic doses of unfractionated heparin
  - Those receiving prophylactic doses of unfractionated heparin
  - Those receiving their last dose of once-daily low-dose low-molecular-weight heparin within the last 12 hours
- 19-23. Of the following steps taken prior to the induction of general anesthesia, which has been the key factor in decreasing maternal mortality rates from general anesthesia?
- Antacids
  - Preoxygenation
  - Uterine displacement
  - Aggressive IV hydration
- 19-24. This image depicts which of the following?
- Tuohy maneuver
  - Sellick maneuver
  - Teabeaut maneuver
  - Mendelson maneuver



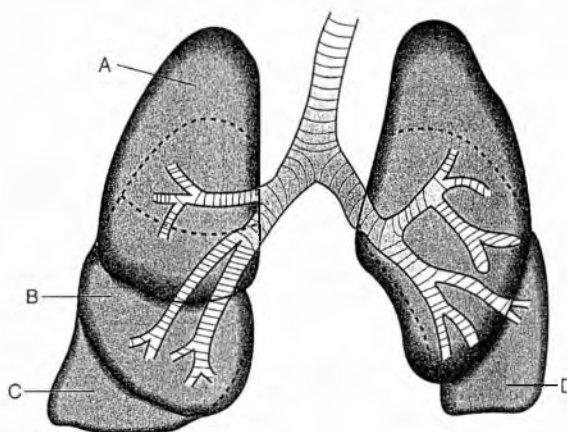
Reproduced, with permission, from Stone CK, Humphries RL: Current Diagnosis & Treatment: Emergency Medicine, 6th ed. New York, McGraw-Hill, 2008, Figure 8-4.

**19-25.** Which of the following is a gas anesthetic adequate for general anesthesia?

- a. Ketamine
- b. Thiopental
- c. Isoflurane
- d. Succinylcholine

**19-26.** What pulmonary lobe is most often involved in aspiration as a complication of general anesthesia?

- a. Right upper lobe
- b. Right middle lobe
- c. Right lower lobe
- d. Left lower lobe



Reproduced, with permission, from LeBlond RF, Brown DD, DeGowin RL: *DeGowin's Diagnostic Examination*, 9th ed. New York, McGraw-Hill, 2009, Figure 8-3.

**Chapter 19 Answer Key**

| Question number | Letter answer | Page cited | Header cited                             | Question number | Letter answer | Page cited  | Header cited                                    |
|-----------------|---------------|------------|------------------------------------------|-----------------|---------------|-------------|-------------------------------------------------|
| <b>19-1</b>     | <b>d</b>      | p. 444     | General Principles                       | <b>19-14</b>    | <b>c</b>      | p. 452      | Spinal (Postdural Puncture) Headache            |
| <b>19-2</b>     | <b>b</b>      | p. 446     | Table 19-2                               | <b>19-15</b>    | <b>a</b>      | p. 453      | Table 19-5                                      |
| <b>19-3</b>     | <b>c</b>      | p. 446     | Narcotic Antagonists                     | <b>19-16</b>    | <b>c</b>      | p. 453, 459 | Preeclampsia, and Severe Preeclampsia/Eclampsia |
| <b>19-4</b>     | <b>a</b>      | p. 447     | Figure 19-1, and Uterine Innervation     | <b>19-17</b>    | <b>d</b>      | p. 454      | Figure 19-4                                     |
| <b>19-5</b>     | <b>b</b>      | p. 447     | Lower Genital Tract Innervation          | <b>19-18</b>    | <b>c</b>      | p. 454      | Continuous Lumbar Epidural Block                |
| <b>19-6</b>     | <b>d</b>      | p. 449     | Pudendal Block, and Figure 19-2          | <b>19-19</b>    | <b>b</b>      | p. 455      | Hypotension                                     |
| <b>19-7</b>     | <b>b</b>      | p. 449     | Anesthetic Agents                        | <b>19-20</b>    | <b>d</b>      | p. 456      | Effect on Labor and Cesarean Delivery           |
| <b>19-8</b>     | <b>d</b>      | p. 449     | CNS toxicity and Cardiovascular Toxicity | <b>19-21</b>    | <b>a</b>      | p. 457      | Thrombocytopenia                                |
| <b>19-9</b>     | <b>b</b>      | p. 450     | Paracervical Block                       | <b>19-22</b>    | <b>c</b>      | p. 457      | Anticoagulation                                 |
| <b>19-10</b>    | <b>c</b>      | p. 450     | Spinal Block, and Figure 19-3            | <b>19-23</b>    | <b>a</b>      | p. 459      | Patient Preparation                             |
| <b>19-11</b>    | <b>a</b>      | p. 450     | Spinal Block                             | <b>19-24</b>    | <b>b</b>      | p. 460      | Intubation                                      |
| <b>19-12</b>    | <b>d</b>      | p. 452     | Table 19-4                               | <b>19-25</b>    | <b>c</b>      | p. 460      | Gas Anesthetics                                 |
| <b>19-13</b>    | <b>d</b>      | p. 452     | Hypotension                              | <b>19-26</b>    | <b>c</b>      | p. 461      | Aspiration/Pathophysiology                      |

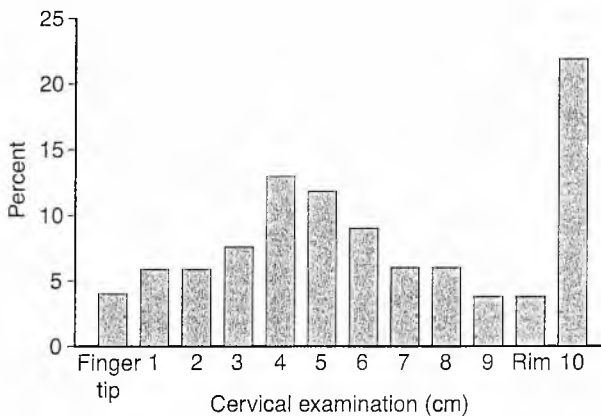
## CHAPTER 20

### Abnormal Labor

**20-1.** Common clinical findings in women with ineffective labor include which of the following?

- a. Inadequate cervical dilation and fetal descent
- b. Fetopelvic disproportion
- c. Ruptured membranes without labor
- d. All of the above

**20-2.** According to this figure, which describes the percentage of women delivered by cesarean for dystocia, approximately what percentage of women are not in active labor at the time of cesarean delivery for dystocia?



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- a. 5%
- b. 25%
- c. 40%
- d. 50%

**20-3.** Regarding hypotonic uterine dysfunction, which of the following is true?

- a. There can be basal hypertonus.
- b. The pressure gradient is distorted.
- c. There is complete asynchronism of impulses originating in each cornu.
- d. None of the above.

**20-4.** Concerning maternal pushing efforts, which of the following is true?

- a. The urge to push begins at approximately 8 cm.
- b. The force of uterine contractions and abdominal musculature propel the fetus downward.
- c. Regional anesthesia has no effect on maternal ability to push.
- d. Actively coaching expulsive efforts offers significant neonatal and maternal advantages.

**20-5.** Concerning walking during the first stage of labor, which of the following is true?

- a. Ambulation affects labor duration.
- b. Ambulation does not affect the need for analgesia.
- c. Ambulation is harmful to the fetus-neonate.
- d. None of the above.

**20-6.** Membrane rupture at term without labor complicates what percentage of pregnancies?

- a. 8%
- b. 12%
- c. 16%
- d. 20%

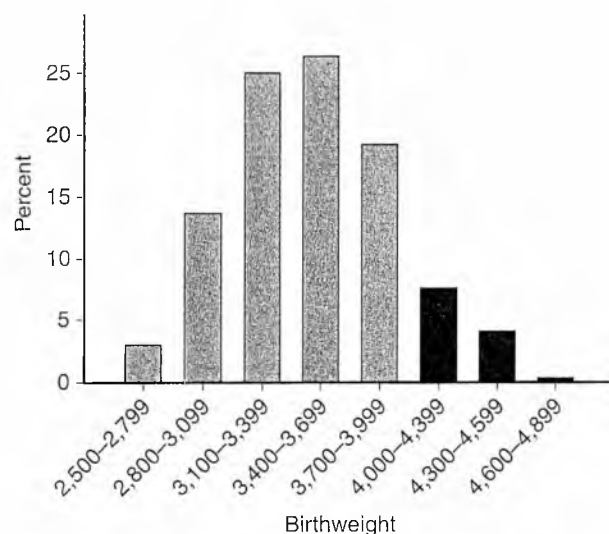
**20-7.** Precipitous labor and delivery is defined as labor that terminates with the expulsion of the fetus in what time frame?

- a. 2 hours
- b. 3 hours
- c. 4 hours
- d. 1 hour

**20-8.** Precipitous labor and delivery increases the risk of which of the following?

- a. Amniotic fluid embolism
- b. Postpartum hemorrhage
- c. Uterine rupture
- d. All of the above

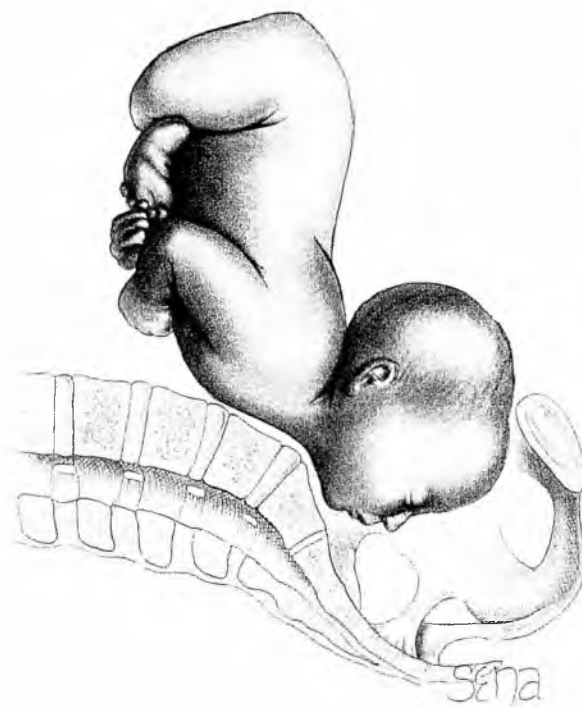
- 20-9. In a contracted pelvic inlet, the anteroposterior diameter is less than which of the following?
- 13 cm
  - 12 cm
  - 11 cm
  - 10 cm
- 20-10. There is reason to suspect midpelvic contraction whenever the interspinous diameter is less than which of the following is true?
- 11 cm
  - 10 cm
  - 9 cm
  - 8 cm
- 20-11. The posterior triangle of the pelvic outlet is limited at its apex by which of the following?
- Coccyx
  - Last sacral vertebrae
  - S4
  - S3
- 20-12. This figure, which describes the percentage of failed forceps delivery by birthweight, suggests which of the following?



Reproduced, with permission, from Cunningham FG, Leveno KJ, Bloom SL, et al: Williams Obstetrics, 23rd ed. New York, McGraw-Hill, 2010.

- Most failed forceps are for macrosomic babies.
- The highest prevalence of forceps applications for that time period was for fetuses weighing 3,400–3,699 g.
- Most failed forceps occurred in the 3,400–3,699 g strata.
- None of the above.

- 20-13. In this figure, which of the following is illustrated?



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- Brow presentation
  - Mentum posterior face presentation
  - A mentum anterior face presentation
  - A presentation that may proceed to vaginal delivery
- 20-14. A brow presentation occurs with which of the following changes at the neck?
- Hyperflexion
  - Military position
  - Hyperextension
  - None of the above
- 20-15. Which of the following is a common cause of transverse lie?
- Term fetus
  - Placental abruption
  - Oligohydramnios
  - Placenta previa

**20-16.** Compound presentations occur with what frequency?



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- a. 1/100 deliveries
- b. 1/200 deliveries
- c. 1/500 deliveries
- d. 1/1,000 deliveries

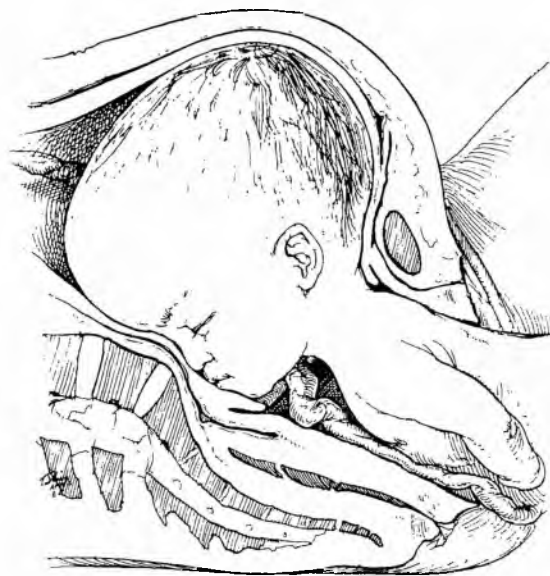
**20-17.** Concerning an occiput posterior (OP) position, which of the following is true?

- a. At the beginning of labor, 25% of fetuses are OP.
- b. Most OP presentations at delivery were initially OP.
- c. Two-thirds convert to occiput anterior by delivery.
- d. None of the above.

**20-18.** Persistent occiput transverse positions are frequently seen with which of the following?

- a. Platypelloid pelvis
- b. Hypotonic contractions
- c. Android pelvis
- d. All of the above

**20-19.** Vaginal delivery of a hydrocephalic fetus should be allowed in which of the following clinical situations?



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- a. After cephalocentesis
- b. If cephalic and biparietal diameter (BPD) is  $\leq 15$  cm
- c. After cephalocentesis in a fetus with severe associated anomalies
- d. None of the above

**20-20.** What is the incidence of shoulder dystocia?

- a. 0.2%
- b. 0.6–1.4%
- c. 2.5%
- d. None of the above

**20-21.** Which of the following is true of brachial plexus injuries?

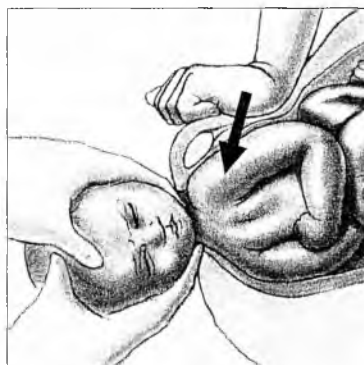
- a. They occur exclusively with shoulder dystocia.
- b. They are usually permanent.
- c. They may result in Erb palsy or Klumpke paralysis.
- d. They frequently occur after downward traction on the posterior shoulder during delivery.

**20-22.** Which of the following is true of shoulder dystocia?

- a. It is not predictable.
- b. It is associated with multiparity.
- c. It has a 13–25% recurrence risk.
- d. All of the above.



- 20-23.** Which of the following techniques is used for shoulder dystocia?
- McRoberts maneuver
  - Woods screw maneuver
  - Delivery of the posterior shoulder
  - All of the above
- 20-24.** The initial step in a shoulder dystocia drill includes which of the following?
- Quickly draining the bladder and using traction on the anterior shoulder
  - Immediately cutting an episiotomy prior to calling for help
  - Calling for help immediately
  - Immediately attempting delivery of the posterior arm
- 20-25.** This figure illustrates which of the following techniques?
- Zavanelli maneuver
  - Woods screw maneuver
  - McRoberts maneuver
  - Delivery of the posterior arm



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**Chapter 20 Answer Key**

| Question number | Letter answer | Page cited | Header cited                     |
|-----------------|---------------|------------|----------------------------------|
| 20-1            | d             | p. 465     | Table 20-1                       |
| 20-2            | b             | p. 466     | Figure 20-1                      |
| 20-3            | d             | p. 467     | Types of Uterine Dysfunction     |
| 20-4            | b             | p. 468     | Maternal Pushing Efforts         |
| 20-5            | b             | p. 469     | Maternal Position During Labor   |
| 20-6            | a             | p. 470     | Ruptured Membranes Without Labor |
| 20-7            | b             | p. 470     | Precipitous Labor and Delivery   |
| 20-8            | d             | p. 470     | Precipitous Labor and Delivery   |
| 20-9            | d             | p. 471     | Contracted Inlet                 |
| 20-10           | b             | p. 471     | Contracted Midpelvis             |
| 20-11           | b             | p. 472     | Contracted Outlet                |
| 20-12           | d             | p. 474     | Figure 20-5                      |
| 20-13           | b             | p. 474     | Figure 20-6                      |

| Question number | Letter answer | Page cited | Header cited                                 |
|-----------------|---------------|------------|----------------------------------------------|
| 20-14           | b             | p. 476     | Figure 20-8 and Brow presentation            |
| 20-15           | d             | p. 476     | Transverse Lie                               |
| 20-16           | d             | p. 478     | Figure 20-11 and Compound Presentations      |
| 20-17           | c             | p. 479     | Persistent Occiput Posterior Position        |
| 20-18           | d             | p. 480     | Persistent Occiput Transverse Positions      |
| 20-19           | c             | p. 481     | Figure 20-13 and Dystocia from Hydrocephalus |
| 20-20           | b             | p. 481     | Shoulder Dystocia                            |
| 20-21           | c             | p. 482     | Brachial Plexopathy                          |
| 20-22           | d             | p. 482     | Risk Factors                                 |
| 20-23           | d             | p. 483     | Management                                   |
| 20-24           | c             | p. 483     | Management                                   |
| 20-25           | c             | p. 484     | Figure 20-15                                 |

## CHAPTER 21

# Disorders of Amnionic Fluid Volume

**21-1.** Using the technique demonstrated in the figure, what is the threshold for the diagnosis of hydramnios?



- a. 18 cm
- b. 20 cm
- c. 24 cm
- d. 28 cm

**21-2.** At what gestational age does amnionic fluid volume reach its peak?

- a. 28 weeks
- b. 32 weeks
- c. 36 weeks
- d. 40 weeks

**21-3.** Concurrent use of this imaging technique with amnionic fluid index (AFI) measurements leads to which of the following?



- a. Improved fetal outcomes
- b. Overdiagnosis of hydramnios
- c. Overdiagnosis of oligohydramnios
- d. More accurate estimation of amnionic fluid volume

**21-4.** Hydramnios has been defined as which of the following?

- a. Amnionic fluid volume > 2 L
- b. Amnionic fluid index > 20 cm
- c. Single deepest pocket > 6 cm
- d. All of the above

**21-5.** What percent of all pregnancies are complicated by hydramnios?

- a. 1%
- b. 5%
- c. 10%
- d. 15%

- 21-6. What percent of fetuses with the finding shown in this sonogram have hydramnios?

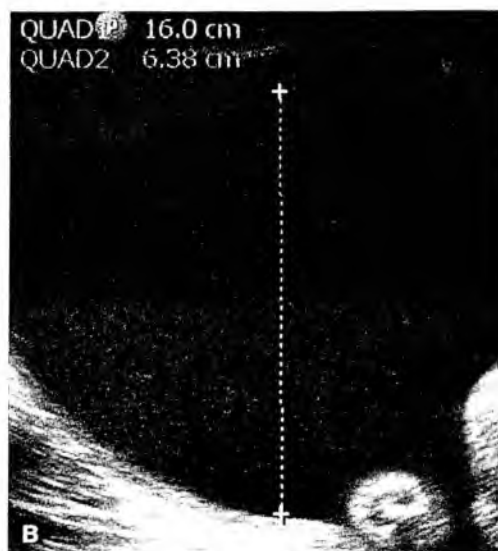
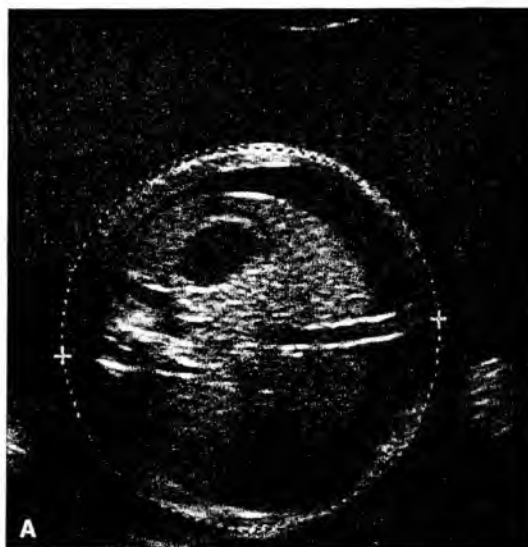


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- a. 15%
  - b. 25%
  - c. 50%
  - d. 75%
- 21-7. An explanation for the hydramnios associated with the abnormality seen in question 21-6 includes which of the following?
- a. Fetal hyperglycemia
  - b. Increased transudation across exposed meninges
  - c. Decreased urination due to central nervous system abnormality
  - d. All of the above
- 21-8. What is the risk for fetal malformations or chromosomal abnormalities in a pregnancy complicated by hydramnios if sonography does not reveal abnormalities?
- a. 2.5%
  - b. 5%
  - c. 10%
  - d. 25%
- 21-9. Congenital fetal anomalies associated with hydramnios include all EXCEPT which of the following?
- a. Duodenal atresia
  - b. Cardiac malformation
  - c. Bilateral renal dysplasia
  - d. Sacrococcygeal teratoma

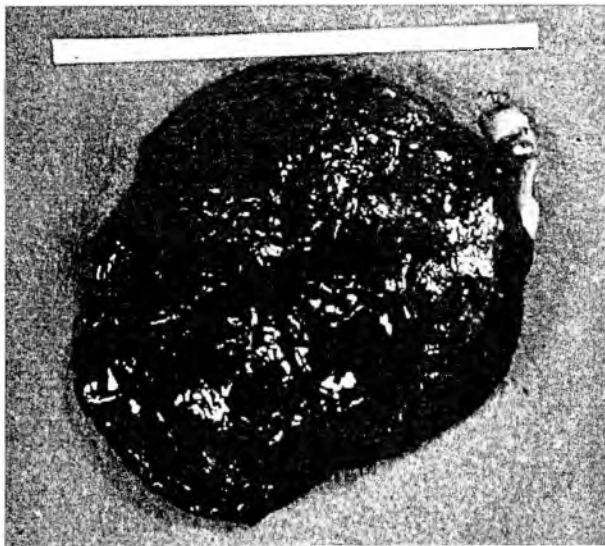
- 21-10. What is the relative risk of hydramnios in diabetic women who require insulin during pregnancy compared with those who do not require insulin?
- a. No difference
  - b. Twofold increase
  - c. Fivefold increase
  - d. Twofold reduction

- 21-11. A new patient presents for her first prenatal visit at 26 weeks. She is concerned about rapid abdominal growth. Sonographic findings include a 26-week fetus with these findings and a pleural effusion. Associated maternal complications classically may include all EXCEPT which of the following?



- a. Dyspnea
- b. Seizures
- c. Mirror syndrome
- d. Lower extremity edema

- 21-12.** Amnionic fluid volume may be altered by changes in all **EXCEPT** which of the following?
- Altitude
  - Fetal swallowing
  - Maternal hydration
  - Maternal hematocrit
- 21-13.** A patient has a single deepest pocket of 9 cm during sonographic examination performed at 18 weeks' gestation. Six weeks later the amnionic fluid volume appears normal. What should she be told about this finding?
- Her fetus has a slightly increased risk for aneuploidy.
  - Her fetus has a higher risk for a gastrointestinal tract abnormality.
  - She has a high likelihood of having an abnormal glucose tolerance test.
  - The outcome of her pregnancy should be similar to others who did not have this complication.
- 21-14.** Following amnioreduction, a patient experiences vaginal bleeding, and at delivery, the placenta appears as shown. What is the likely cause of these findings?



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- Increased intrauterine pressure during the procedure
  - Reduction in uterine surface area following the amniocentesis
  - Maternal hypotension from being supine during the procedure
  - Accidental laceration of the umbilical cord during the procedure
- 21-15.** Which of the following statements accurately applies to the use of indomethacin for the treatment of hydramnios?
- Amnionic fluid volumes are unchanged.
  - Fetal lung liquid absorption is improved.
  - Fetal breathing rates are decreased with its use.
  - Constriction of the ductus venosus occurs in 90% of exposed fetuses.
- 21-16.** What is the rate of decline in the amnionic fluid index in pregnancies beyond 41 weeks' gestation?
- 10%
  - 25%
  - 50%
  - 75%
- 21-17.** Sonographically diagnosed congenital cardiac malformations are associated with which of the following?
- Normal amnionic fluid volume
  - Increased amnionic fluid volume
  - Decreased amnionic fluid volume
  - All of the above
- 21-18.** In the setting of oligohydramnios, pulmonary hypoplasia may be explained by which of the following?
- Increased fetal breathing
  - Decreased outflow of intrapulmonary fluid
  - Increased chest wall excursion with fetal gasping
  - None of the above
- 21-19.** What is the rate of oligohydramnios (amnionic fluid index <5 cm) after 34 weeks' gestation?
- 2%
  - 4%
  - 6%
  - 8%
- 21-20.** Causes for oligohydramnios include all **EXCEPT** which of the following?
- Placental abruption
  - Medication use
  - Neural-tube defects
  - Uteroplacental insufficiency
- 21-21.** The American College of Obstetricians and Gynecologists supports the use of amnioinfusion to reduce the risk of which of the following?
- Tachysystole
  - Neonatal sepsis
  - Variable decelerations
  - Meconium aspiration syndrome

- 21-22.** Most recent meta-analyses evaluating amnioinfusion to reduce fetal morbidity from meconium aspiration demonstrate which of the following?
- a. Reduced risk of perinatal death
  - b. Improved 5-minute Apgar scores  $>7$
  - c. Reduced risk for meconium aspiration syndrome
  - d. No change in the incidence of cesarean delivery
- 21-23.** Which of the following anomalies is **NOT** usually present in the fetus associated with oligohydramnios?
- a. Cleft lip
  - b. Limb reduction defect
  - c. Diaphragmatic hernia
  - d. Adhesions of the amnion to fetus
- 21-24.** Autopsy findings in newborns diagnosed with Potter syndrome or Potter sequence may include which of the following?
- a. Normal kidneys
  - b. Bilateral renal agenesis
  - c. Minor urinary abnormalities
  - d. All of the above
- 21-25.** What is felt to be the etiology of maternal deaths associated with amnioinfusion in pregnancies associated with thick meconium?
- a. Rapid labor
  - b. Septic shock
  - c. Pulmonary embolus
  - d. Hemorrhage caused by the intrauterine catheter

**Chapter 21 Answer Key**

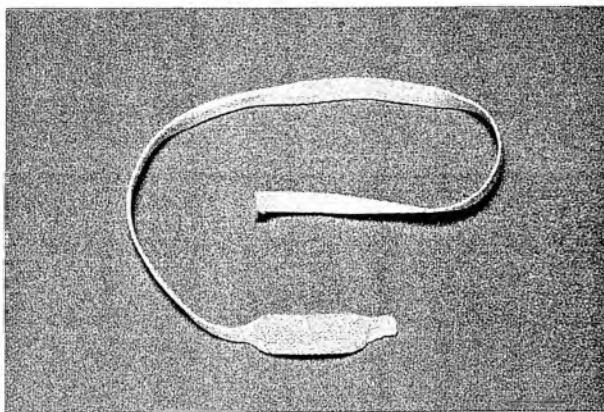
| Question number | Letter answer | Page cited | Header cited                  |
|-----------------|---------------|------------|-------------------------------|
| <b>21-1</b>     | <b>c</b>      | p. 491     | Incidence                     |
| <b>21-2</b>     | <b>b</b>      | p. 490     | Measurement of Amnionic Fluid |
| <b>21-3</b>     | <b>c</b>      | p. 490     | Measurement of Amnionic Fluid |
| <b>21-4</b>     | <b>a</b>      | p. 490     | Normal Amnionic Fluid Volume  |
| <b>21-5</b>     | <b>a</b>      | p. 491     | Incidence                     |
| <b>21-6</b>     | <b>c</b>      | p. 491     | Causes of Hydramnios          |
| <b>21-7</b>     | <b>b</b>      | p. 493     | Pathogenesis                  |
| <b>21-8</b>     | <b>a</b>      | p. 492     | Causes of Hydramnios          |
| <b>21-9</b>     | <b>c</b>      | p. 491     | Causes of Hydramnios          |
| <b>21-10</b>    | <b>c</b>      | p. 493     | Pathogenesis                  |
| <b>21-11</b>    | <b>b</b>      | p. 493     | Clinical Manifestations       |
| <b>21-12</b>    | <b>d</b>      | p. 490     | Measurement of Amnionic Fluid |

| Question number | Letter answer | Page cited | Header cited                      |
|-----------------|---------------|------------|-----------------------------------|
| <b>21-13</b>    | <b>d</b>      | p. 494     | Midtrimester Hydramnios           |
| <b>21-14</b>    | <b>b</b>      | p. 493     | Pregnancy Outcome                 |
| <b>21-15</b>    | <b>b</b>      | p. 495     | Indomethain Treatment             |
| <b>21-16</b>    | <b>b</b>      | p. 495     | Oligohydramnios                   |
| <b>21-17</b>    | <b>d</b>      | p. 496     | Table 21-4                        |
| <b>21-18</b>    | <b>d</b>      | p. 496     | Pulmonary Hypoplasia              |
| <b>21-19</b>    | <b>a</b>      | p. 497     | Oligohydramnios in Late Pregnancy |
| <b>21-20</b>    | <b>c</b>      | p. 495     | Table 21-3                        |
| <b>21-21</b>    | <b>c</b>      | p. 498     | Amnioinfusion                     |
| <b>21-22</b>    | <b>d</b>      | p. 498     | Amnioinfusion                     |
| <b>21-23</b>    | <b>b</b>      | p. 496     | Table 21-4                        |
| <b>21-24</b>    | <b>d</b>      | p. 496     | Prognosis                         |
| <b>21-25</b>    | <b>a</b>      | p. 498     | Amnioinfusion                     |

## CHAPTER 22

# Labor Induction

- 22-1. Compared with the *induction* of labor, the *augmentation* of labor differs in what regard?
- Contractions are pharmacologically stimulated.
  - Pitocin is titrated to effect.
  - Previously commenced labor fails to effect cervical change.
  - The fetal membranes are intact.
- 22-2. All **EXCEPT** which of the following are contraindications to labor induction?
- Fetal macrosomia
  - Maternal diabetes mellitus
  - Breech presentation
  - Twin pregnancy
- 22-3. Which of the following characteristics is **NOT** associated with an increased risk of cesarean delivery in the setting of labor induction?
- Nulliparity
  - Low Bishop Score
  - Unengaged fetal head
  - Occiput posterior fetal head position
- 22-4. Women with induced labors have increased risks for which of the following peripartum complications?
- Chorioamnionitis
  - Postpartum hemorrhage
  - Hysterectomy
  - All of the above
- 22-5. Which of the following women would be most likely to have a successful induction of labor?
- G2P1 with a body mass index of 34 and a neonatal birthweight of 3,250 g
  - G1P0 with a body mass index of 25 and a neonatal birthweight of 3,800 g
  - G2P1 with a body mass index of 27 and a neonatal birthweight of 3,150 g
  - G1P0 with a body mass index of 31 and a neonatal birthweight of 2,900 g
- 22-6. The Bishop Score comprises all **EXCEPT** which of the following cervical factors?
- Color
  - Consistency
  - Position
  - Effacement
- 22-7. When followed by an oxytocin infusion, the use of prostaglandin E<sub>2</sub> for cervical ripening has been demonstrated to have what benefit?
- Decreased induction-to-delivery time
  - Decreased rates of tachysystole
  - Decreased Bishop score
  - Decreased cesarean delivery rate
- 22-8. When administering dinoprostone using the device shown here, which of the following should be avoided?

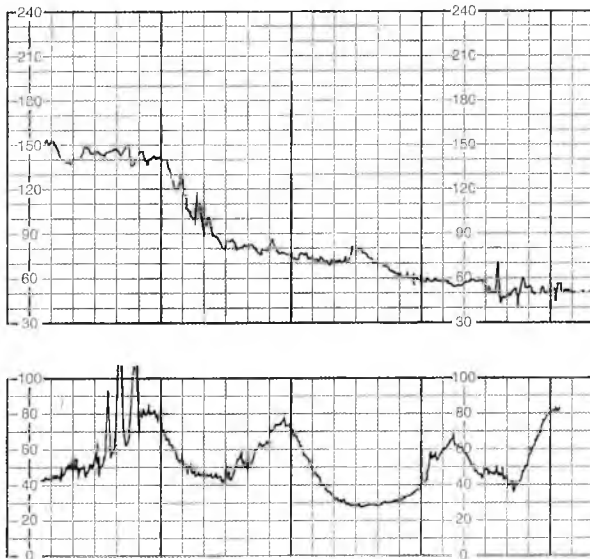


Reproduced, with permission, from Cunningham FG, Leveno KJ, Bloom SL, et al: Williams Obstetrics, 23rd ed. New York, McGraw-Hill, 2010.

- The patient remaining recumbent for the first 2 hours after insertion
- Subsequent use of oxytocin
- The use of lubricants during insertion
- Removal of the device with the onset of labor



- 22-9. Uterine tachysystole occurs in approximately what percentage of women who receive prostaglandin  $E_2$ ?
- <1%
  - 1–5%
  - 6–10%
  - >10%
- 22-10. The fetal heart rate tracing shown in this figure was associated with uterine hyperactivity. According to definitions established by the American College of Obstetricians and Gynecologists (ACOG), what is the appropriate term for this condition?



Reproduced, with permission, from Cunningham FG, Leveno KJ, Bloom SL, et al: Williams Obstetrics, 23rd ed. New York, McGraw-Hill, 2010.

- Uterine tachysystole
  - Uterine hypertonus
  - Uterine hyperstimulation
  - All of the above terms may be applied to this situation
- 22-11. Prostaglandin agents, in general, should be avoided or used with caution in patients who have all **EXCEPT** which of the following conditions?
- Preeclampsia
  - Glaucoma
  - Asthma
  - Increased intraocular pressure
- 22-12. Misoprostol (prostaglandin  $E_1$ ) is approved by the U.S. Food and Drug Administration (FDA) for what indication?
- Labor induction
  - Peptic ulcer prevention
  - Cervical ripening
  - Cholelithiasis

- 22-13. Based on the available evidence from randomized controlled trials, the ACOG recommends what dose of intravaginal misoprostol (prostaglandin  $E_1$ ) for cervical ripening?
- 25  $\mu$ g
  - 50  $\mu$ g
  - 100  $\mu$ g
  - 200  $\mu$ g
- 22-14. A 23-year-old G2P1 at 38 weeks' gestation presents to labor and delivery with premature rupture of fetal membranes. She has had one previous low-transverse cesarean delivery for malpresentation at term but strongly desires a trial of labor. Vaginal misoprostol is administered to stimulate labor, but 90 minutes into the induction, fetal bradycardia mandates emergent cesarean delivery. The uterus has an appearance similar to the pathologic specimen shown below. What is the most appropriate use of prostaglandins in patients with a previous uterine scar?



Reproduced, with permission, from Cunningham FG, Leveno KJ, Bloom SL, et al: Williams Obstetrics, 23rd ed. New York, McGraw-Hill, 2010.

- They should only be used in a low-dose preparation.
- They should only be used with continuous fetal heart rate monitoring.
- They should only be administered orally.
- They should be avoided completely.

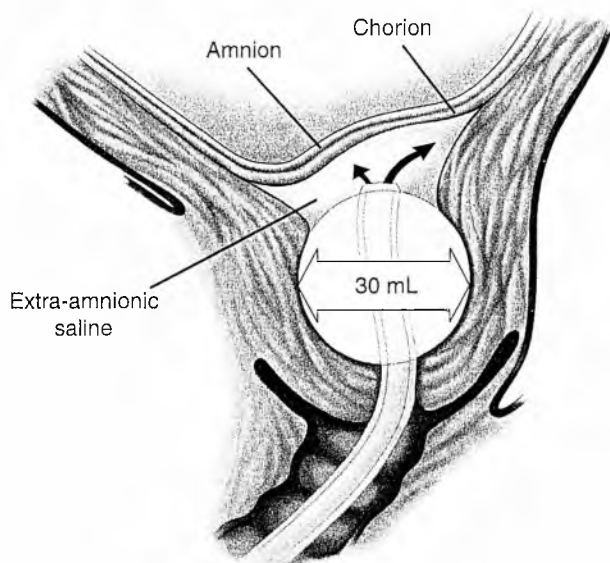
**22-15.** In theory, nitric oxide (NO) donors should be effective agents to stimulate labor based on which of the following facts?

- a. NO is a mediator of cervical ripening.
- b. NO metabolites are increased in early labor.
- c. NO production is low in postterm pregnancies.
- d. All of the above.

**22-16.** Compared with prostaglandin E<sub>2</sub> in clinical trials, which of the following is true of NO donors?

- a. They increase the cesarean delivery rate.
- b. They result in more uterine hyperstimulation.
- c. They are less effective for cervical ripening.
- d. They cause more fetal distress.

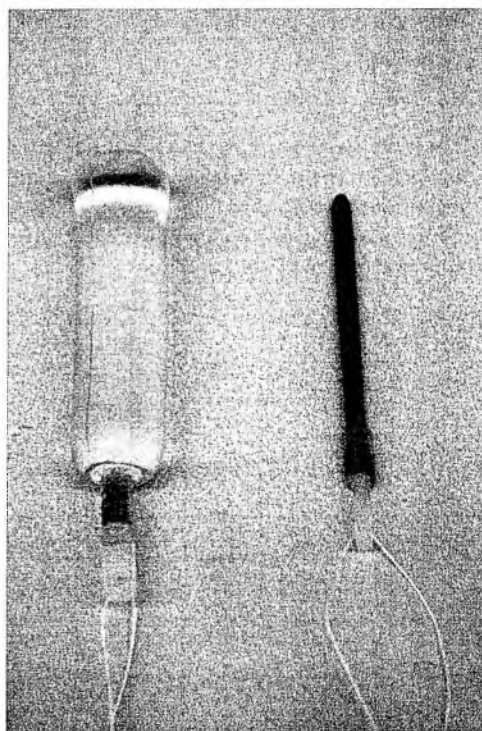
**22-17.** Which of the following statements is true regarding the mechanical technique for cervical ripening shown below?



Reproduced, with permission, from Cunningham FG, Leveno KJ, Bloom SL, et al: Williams Obstetrics, 23rd ed. New York, McGraw-Hill, 2010.

- a. The cesarean delivery rate is increased compared with that with prostaglandins.
- b. Chorioamnionitis develops in at least 25% of women so treated.
- c. Induction-to-delivery times may be decreased compared with prostaglandins.
- d. The risk for preterm birth in subsequent pregnancies is increased.

**22-18.** What are the apparent benefits of the mechanical dilating device shown below for cervical ripening?



- a. Decreased cesarean delivery rate
- b. Shorter induction-to-delivery time
- c. Less frequent meconium passage in utero
- d. Ease of placement and removal

**22-19.** Most women who undergo membrane stripping at term enter labor within how many hours?

- a. 12
- b. 24
- c. 72
- d. 96

**22-20.** In general, oxytocin infusions should be discontinued if the number of contractions in 10 minutes persists with a frequency greater than how much?

- a. 3
- b. 5
- c. 7
- d. 10

**22-21.** What is the mean half-life of oxytocin?

- a. 2 minutes
- b. 5 minutes
- c. 10 minutes
- d. 20 minutes

- 22-22.** Potential benefits of a high-dose oxytocin regimen (4.5–6 mU/mL) compared with a low-dose regimen (0.5–1.5 mU/mL) include which of the following?
- a. Decreased admission-to-delivery intervals
  - b. Fewer failed inductions
  - c. Lower rates of intrapartum chorioamnionitis
  - d. All of the above
- 22-23.** At what oxytocin infusion dosage does free-water clearance begin to decrease markedly?
- a. 10 mU/mL
  - b. 20 mU/mL
  - c. 36 mU/mL
  - d. 48 mU/mL
- 22-24.** On average, epidural analgesia prolongs the active phase of labor by how long?
- a. 1 hour
  - b. 90 minutes
  - c. 2 hours
  - d. 3 hours
- 22-25.** Elective amniotomy increases the risk for which of the following?
- a. Late decelerations
  - b. Placental abruption
  - c. Chorioamnionitis
  - d. Cesarean delivery

## Chapter 22 Answer Key

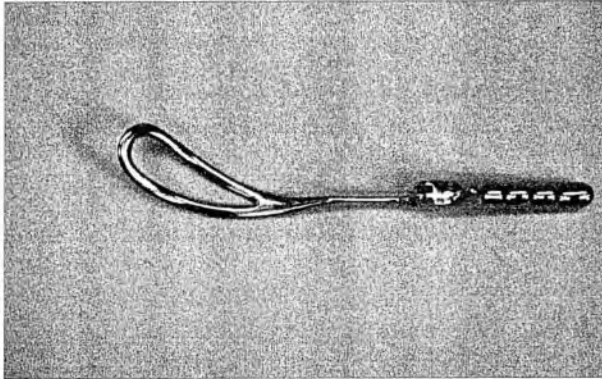
| Question number | Letter answer | Page cited | Header cited                   |
|-----------------|---------------|------------|--------------------------------|
| 22-1            | c             | p. 500     | Introduction                   |
| 22-2            | b             | p. 500     | Labor Induction                |
| 22-3            | d             | p. 501     | Labor Induction                |
| 22-4            | d             | p. 501     | Labor Induction                |
| 22-5            | c             | p. 501     | Labor Induction                |
| 22-6            | a             | p. 502     | Table 22-1                     |
| 22-7            | a             | p. 502     | Preinduction Cervical Ripening |
| 22-8            | c             | p. 502     | Preinduction Cervical Ripening |
| 22-9            | b             | p. 502     | Preinduction Cervical Ripening |
| 22-10           | c             | p. 503     | Preinduction Cervical Ripening |
| 22-11           | a             | p. 503     | Preinduction Cervical Ripening |
| 22-12           | b             | p. 503     | Preinduction Cervical Ripening |
| 22-13           | a             | p. 503     | Preinduction Cervical Ripening |
| 22-14           | d             | p. 503     | Preinduction Cervical Ripening |
| 22-15           | d             | p. 503     | Preinduction Cervical Ripening |

| Question number | Letter answer | Page cited | Header cited                                   |
|-----------------|---------------|------------|------------------------------------------------|
| 22-16           | c             | p. 503     | Preinduction Cervical Ripening                 |
| 22-17           | c             | p. 504     | Preinduction Cervical Ripening                 |
| 22-18           | d             | p. 504     | Preinduction Cervical Ripening                 |
| 22-19           | c             | p. 506     | Labor Induction and Augmentation with Oxytocin |
| 22-20           | b             | p. 506     | Labor Induction and Augmentation with Oxytocin |
| 22-21           | b             | p. 506     | Labor Induction and Augmentation with Oxytocin |
| 22-22           | d             | p. 506     | Labor Induction and Augmentation with Oxytocin |
| 22-23           | b             | p. 507     | Labor Induction and Augmentation with Oxytocin |
| 22-24           | a             | p. 508     | Labor Induction and Augmentation with Oxytocin |
| 22-25           | c             | p. 508     | Labor Induction and Augmentation with Oxytocin |

## CHAPTER 23

# Forceps Delivery and Vacuum Extraction

- 23-1.** The opening in this forceps blade serves which of the following functions?



- a. Protects the fetal ears
  - b. Protects the fetal scalp
  - c. Allows blades to grip the fetal head firmly
  - d. Offers a smaller metal surface area against the fetal skull
- 23-2.** In current obstetrics, forceps deliveries are categorized into one of the following three groups?
- a. High forceps, midforceps, low forceps
  - b. Midforceps, low forceps, outlet forceps
  - c. Inlet forceps, midforceps, outlet forceps
  - d. Inlet forceps, low forceps, outlet forceps
- 23-3.** Which of the following is true of high forceps delivery?
- a. Indicated for fetal distress
  - b. Forceps applied at +1 station
  - c. No role in modern obstetrics
  - d. Forceps applied when head is engaged
- 23-4.** In general, the categories of forceps delivery are defined primarily by which of the following?
- a. Fetal station
  - b. Type of forceps used
  - c. Maternal pelvic shape
  - d. Degree of fetal head molding

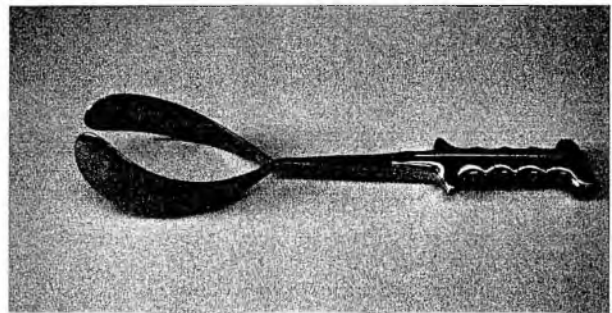
- 23-5.** Which of the following describes forceps that are applied to the fetal head with the scalp visible at the introitus without manual separation of the labia?

- a. Midforceps
- b. Low forceps
- c. Inlet forceps
- d. Outlet forceps

- 23-6.** Which of the following describes forceps that are applied to the fetal head at +1 station?

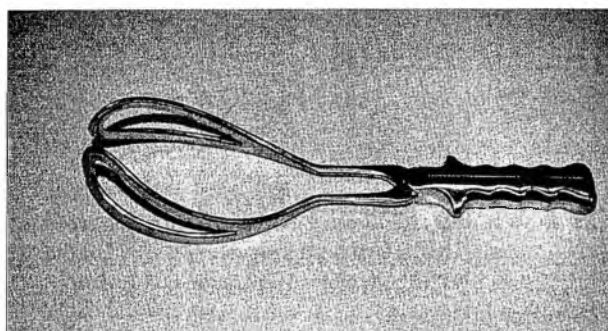
- a. Midforceps
- b. Low forceps
- c. Inlet forceps
- d. Outlet forceps

- 23-7.** The pair of forceps shown below is ideally suited for which of the following obstetrical situations?



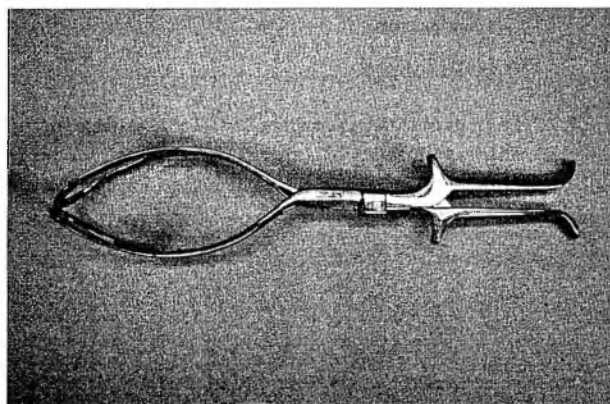
- a. Rotation of a fetus from OT to OA
- b. Delivery of a mentum posterior fetus
- c. Delivery of a fetus with a molded head
- d. Delivery of a fetus with a rounded head

- 23-8.** This pair of forceps is ideally suited for which of the following obstetrical situations?



- a. Rotation of a fetus from OT to OA
- b. Delivery of a mentum posterior fetus
- c. Delivery of a fetus with a molded head
- d. Delivery of a fetus with a rounded head

- 23-9.** This forceps is ideally suited for which of the following obstetrical situations?



- a. Rotation of a fetus from OT to OA
- b. Delivery of a mentum posterior fetus
- c. Delivery of a fetus with a molded head
- d. Delivery of a fetus with a rounded head

- 23-10.** Maternal indications for forceps delivery include all EXCEPT which of the following?

- a. Heart disease
- b. Chorioamnionitis
- c. Spinal cord injury
- d. Pelvic floor protection

- 23-11.** Fetal indications for forceps delivery include which of the following?

- a. Fetal coagulopathy
- b. Fetal congenital heart block
- c. Nonreassuring fetal heart rate pattern
- d. Protection of fragile preterm infant head

- 23-12.** Advantages to elective forceps delivery include which of the following?

- a. Lower rates of fetal acidosis
- b. Prevention of perineal laceration
- c. Lower rates of postpartum urinary retention
- d. None of the above

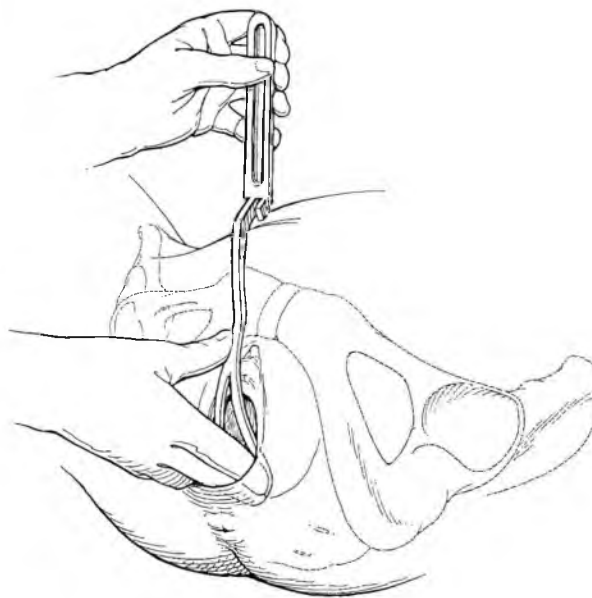
- 23-13.** Prerequisites for forceps application include all EXCEPT which of the following?

- a. Head is engaged
- b. Membranes are ruptured
- c. Cervix is completely dilated
- d. Late fetal heart rate decelerations are absent

- 23-14.** Prior to low forceps delivery, which of the following preparations are routinely implemented?

- a. Mediolateral episiotomy
- b. Enema to empty the rectum
- c. Catheterization to empty the bladder
- d. All of the above

- 23-15.** During forceps placement, positioning of the operator's hand, as shown, serves what role?



Reproduced with permission from Cunningham FG, et al: Williams Obstetrics, 22nd ed. New York: McGraw-Hill, 2005, Figure 23-7.

- a. Protects the fetal ear
- b. Guides the forceps into position
- c. Identifies the ischial spines
- d. Provides fetal scalp stimulation during the procedure

- 23-16. When correctly applied to a fetus in an occiput anterior position, forceps align along which fetal head diameter?
- Bitemporal
  - Occipitofrontal
  - Occipitomenal
  - Suboccipitobregmatic
- 23-17. During operative delivery of a fetus from a +2 station and ROA position, movements of the forceps should follow which sequence?
- Rotation, outward traction, upward traction
  - Upward traction, rotation, outward traction
  - Downward traction, rotation, upward traction
  - Downward traction, rotation, outward traction
- 23-18. Ideally, forceps traction should be applied in which of the following manners?
- Continuously
  - Intermittently and with contractions
  - Intermittently and between contractions
  - Intermittently with cycles of 10 seconds of traction followed by 1 minute of rest
- 23-19. Which of the following is **TRUE** regarding manual rotation of the fetal head from occiput posterior to occiput anterior positions?
- It has no role in modern obstetrics.
  - It should be attempted prior to membrane rupture.
  - Disengagement of the fetal head should be avoided.
  - Forceps are usually applied following successful rotation.
- 23-20. Compared with forceps delivery from an occiput anterior position, which of the following is **TRUE** of delivery from an occiput posterior position?
- Equal rates of episiotomy
  - Higher rates of fetal facial palsy
  - Lower rates of fetal Erb palsy
  - Equal rates of vaginal laceration
- 23-21. When correctly applied to a fetus with a face presentation, forceps align along which fetal head diameter?
- Bitemporal
  - Occipitofrontal
  - Occipitomenal
  - Suboccipitobregmatic
- 23-22. During forceps delivery of a fetus with a face presentation, blades should be swept upward when which of the following passes beneath the symphysis?
- Chin
  - Brow
  - Upper lip
  - Base of the nose
- 23-23. Maternal morbidity with forceps delivery is most closely predicted by which of the following?
- Fetal station
  - Maternal parity
  - Degree of fetal distress
  - Degree of fetal head molding
- 23-24. Forceps delivery, compared with spontaneous vaginal delivery, is associated with higher short-term rates of which of the following maternal complications?
- Episiotomy
  - Anal incontinence
  - Urinary incontinence
  - All of the above
- 23-25. For the fetus, forceps delivery, compared with spontaneous vaginal delivery, is associated with higher rates of all **EXCEPT** which of the following complications?
- Facial palsy
  - Impaired intelligence
  - Brachial plexus injury
  - Intracranial hemorrhage
- 23-26. Factors associated with a failed trial of forceps and need for cesarean delivery include which of the following?
- Advanced parity
  - Coexistent chorioamnionitis
  - Poor maternal pushing efforts
  - Absence of regional or general anesthesia
- 23-27. With vacuum extraction, a metal cup compared with a soft cup is associated with significantly higher rates of which of the following?
- Cephalohematoma
  - Birth canal trauma
  - Low Apgar scores
  - None of the above
- 23-28. In general, vacuum extraction would be contraindicated in all **EXCEPT** which of the following clinical settings?
- 30-week fetus
  - Fetal thrombocytopenia
  - Occiput transverse presentation
  - Inability to assess fetal head position

- 23–29.** With vacuum extraction, correct cup placement is described by which of the following?
- a.** Centered across the sagittal suture.
  - b.** Placed over the posterior fontanel.
  - c.** If ROA, the cup is placed on left fetal parietal bone.
  - d.** Traction axis is aligned with the suboccipitobregmatic diameter.
- 23–30.** Compared with forceps delivery, vacuum extraction is associated with lower rates of which of the following?
- a.** Neonatal jaundice
  - b.** Cephalohematoma
  - c.** Third-degree laceration
  - d.** Neonatal retinal hemorrhage



# Chapter 23 Answer Key

| Question number | Letter answer | Page cited | Header cited                          |
|-----------------|---------------|------------|---------------------------------------|
| 23-1            | c             | p. 511     | Forceps Design                        |
| 23-2            | b             | p. 511     | Classification of Forceps Delivery    |
| 23-3            | c             | p. 511     | Classification of Forceps Delivery    |
| 23-4            | a             | p. 511     | Classification of Forceps Delivery    |
| 23-5            | d             | p. 513     | Table 23-1                            |
| 23-6            | a             | p. 513     | Table 23-1                            |
| 23-7            | d             | p. 512     | Function of Forceps                   |
| 23-8            | c             | p. 512     | Function of Forceps                   |
| 23-9            | a             | p. 517     | Occiput Transverse Rotation           |
| 23-10           | d             | p. 512     | Indications for Forceps               |
| 23-11           | c             | p. 512     | Indications for Forceps               |
| 23-12           | d             | p. 513     | Elective and Outlet Forceps           |
| 23-13           | d             | p. 513     | Prerequisites for Forceps Application |
| 23-14           | c             | p. 513     | Preparation for Forceps Delivery      |
| 23-15           | b             | p. 513     | Forceps Application                   |
| 23-16           | c             | p. 513     | Forceps Application                   |

| Question number | Letter answer | Page cited | Header cited                                      |
|-----------------|---------------|------------|---------------------------------------------------|
| 23-17           | a             | p. 514     | Traction                                          |
| 23-18           | b             | p. 514     | Traction                                          |
| 23-19           | c             | p. 516     | Manual Rotation                                   |
| 23-20           | b             | p. 516     | Forceps Delivery of Occiput Posterior             |
| 23-21           | c             | p. 518     | Face Presentation Forceps Delivery                |
| 23-22           | a             | p. 518     | Face Presentation Forceps Delivery                |
| 23-23           | a             | p. 519     | Lacerations and Episiotomy                        |
| 23-24           | d             | p. 519     | Urinary and Fecal Incontinence                    |
| 23-25           | b             | p. 520     | Perinatal Morbidity                               |
| 23-26           | d             | p. 522     | Trial of Forceps and Failed Forceps               |
| 23-27           | d             | p. 522     | Vacuum Extraction                                 |
| 23-28           | c             | p. 522     | Indications and Prerequisites for Vacuum Delivery |
| 23-29           | a             | p. 523     | Technique                                         |
| 23-30           | c             | p. 524     | Comparison of Vacuum Extraction with Forceps      |

## CHAPTER 24

# Breech Presentation and Delivery

24-1. What percentage of singletons present breech?

- a. 1%
- b. 3–4%
- c. 9–10%
- d. 15%

24-2. Factors associated with breech presentation include all **EXCEPT** which of the following?

- a. Nulliparity
- b. Placenta previa
- c. Fetal malformations
- d. Amnionic fluid abnormalities

24-3. Which of the following statements is accurate regarding the prevalence of breech presentation?

- a. It is stable throughout pregnancy.
- b. It increases with gestational age.
- c. It decreases with gestational age.
- d. It approximates 80% in the 24th week.

24-4. This image shows which type of breech presentation?



Reproduced, with permission, from Cunningham FG, Leveno KJ, Bloom SL, et al: Williams Obstetrics, 23rd ed. New York, McGraw-Hill, 2010.

- a. Frank breech
- b. Footling breech
- c. Complete breech
- d. Incomplete breech

24-5. This image shows which type of breech presentation?



Reproduced, with permission, from Cunningham FG, Leveno KJ, Bloom SL, et al: Williams Obstetrics, 23rd ed. New York, McGraw-Hill, 2010.

- a. Frank breech
- b. Complete breech
- c. Single footling breech
- d. Double footling breech

24-6. A fetus with hips flexed and knees flexed is best described as which of the following?

- a. Frank breech
- b. Complete breech
- c. Single footling breech
- d. Double footling breech

24-7. Which breech presentation has the lowest risk of cord prolapse?

- a. Frank breech
- b. Footling breech
- c. Complete breech
- d. Double footling breech

- 24-8. The best and most readily available way to confirm a suspected breech presentation is with which of the following?
- Sonography
  - Vaginal examination
  - Leopold maneuvers
  - Computed tomography
- 24-9. What percent of breech presenting term fetuses has congenital anomalies?
- 1%
  - 6%
  - 10%
  - 16%
- 24-10. Which fetal injury is not associated with vaginal breech delivery?
- Fracture of clavicle
  - Fracture of humerus
  - Brachial plexus injury
  - Congenital hip dislocation
- 24-11. Based on the review by Cheng and Hannah, what is a correct statement regarding the overall risk of perinatal injury and death in term breech fetuses delivered vaginally?
- It is applicable to preterm breeches.
  - It is the same as that for breeches delivered by cesarean.
  - It is increased fourfold over that of fetuses delivered by cesarean.
  - It is applicable to delivery of an aftercoming breech presenting twin.
- 24-12. Which of the following is accurate regarding preterm vaginal breech deliveries?
- They are as risky as term breech deliveries.
  - The risk of death is greater than with delivery by planned cesarean.
  - The risk of intraventricular hemorrhage is greater than delivery by planned cesarean.
  - The best way to deliver a preterm breech fetus has not been evaluated in any randomized clinical trials.
- 24-13. Contraindications to breech vaginal delivery include which of the following?
- Frank breech
  - Complete breech
  - Hyperextended head
  - Aftercoming breech presenting twin
- 24-14. Which of the following best describes a breech fetus delivered spontaneously as far as the umbilicus, but whose remaining body is delivered with operator traction?
- Mauriceau maneuver
  - Total breech extraction
  - Partial breech extraction
  - Spontaneous breech delivery
- 24-15. Umbilical cord abnormalities seen in breech fetuses include which of the following?
- Short cord
  - Straight cord
  - Hypercoiling
  - Lack of Wharton jelly
- 24-16. This figure shows the operator's hands in proper position during which of the following?



Reproduced, with permission, from Cunningham FG, Leveno KJ, Bloom SL, et al: Williams Obstetrics, 23rd ed. New York, McGraw-Hill, 2010.

- Pinard maneuver
- Partial breech extraction
- Release of a nuchal arm
- Zavanelli maneuver

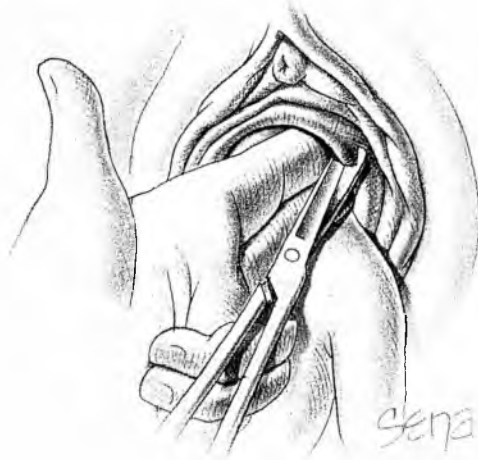
- 24-17.** Which of the following is accurate regarding the Pinard maneuver, shown here?



Reproduced, with permission, from Cunningham FG, Leveno KJ, Bloom SL, et al: *Williams Obstetrics*, 23rd ed. New York, McGraw-Hill, 2010.

- a. It accomplishes fetal decomposition.
  - b. It replaces the fetal feet into the uterus.
  - c. It is easier to perform through an intact amniotic sac.
  - d. It helps convert a footling breech into a frank breech.
- 24-18.** Which of the following may be necessary to deliver the aftercoming head if the fetal trunk fails to rotate anteriorly?
- a. Piper forceps
  - b. Laufe forceps
  - c. Prague maneuver
  - d. Mauriceau maneuver

- 24-19.** What is the name of the procedure shown here, used to resolve head entrapment?



Reproduced, with permission, from Cunningham FG, Leveno KJ, Bloom SL, et al: *Williams Obstetrics*, 23rd ed. New York, McGraw-Hill, 2010.

- a. Symphysiotomy
  - b. Pinard maneuver
  - c. Dührssen incisions
  - d. Zavanelli maneuver
- 24-20.** Which of the following is true of successful external cephalic version?
- a. It is linked to increasing parity.
  - b. It is aided by an anterior fetal spine.
  - c. It occurs in over 80% of version attempts.
  - d. It normalizes the risk of cesarean delivery to that of vertex presentations.
- 24-21.** Absolute contraindications to external cephalic version include which of the following?
- a. Obesity
  - b. Placenta previa
  - c. Anterior placenta
  - d. Prior uterine incision
- 24-22.** For breech decomposition, the most adequate anesthesia is likely to be provided by which of the following?
- a. Spinal anesthesia
  - b. General anesthesia
  - c. Epidural anesthesia
  - d. Pudendal anesthesia

- 24-23.** Which of the following is the only tocolytic agent shown in a randomized trial to increase the success rate of external cephalic version?
- a. Ritodrine
  - b. Terbutaline
  - c. Nitroglycerin
  - d. Magnesium sulfate
- 24-24.** Internal podalic version is usually reserved for which clinical settings?
- a. Frank breech deliveries
  - b. Complete breech deliveries
  - c. Delivery of an aftercoming twin
  - d. Preterm breech deliveries, regardless of presentation
- 24-25.** Which of the following risks are associated to external cephalic version?
- a. Uterine rupture
  - b. Placental abruption
  - c. Fetomaternal hemorrhage
  - d. All of the above

**Chapter 24 Answer Key**

| Question number | Letter answer | Page cited | Header cited                         |
|-----------------|---------------|------------|--------------------------------------|
| 24-1            | b             | p. 527     | Introduction                         |
| 24-2            | a             | p. 527     | Associated Factors                   |
| 24-3            | c             | p. 528     | Figure 24-1                          |
| 24-4            | a             | p. 528     | Figure 24-2                          |
| 24-5            | c             | p. 529     | Figure 24-4                          |
| 24-6            | b             | p. 527     | Definitions                          |
| 24-7            | a             | p. 532     | Fetal Monitoring                     |
| 24-8            | a             | p. 529     | Imaging Techniques/<br>Sonography    |
| 24-9            | b             | p. 529     | Perinatal Morbidity and<br>Mortality |
| 24-10           | d             | p. 530     | Fetal Injuries                       |
| 24-11           | c             | p. 530     | Term Breech Fetus                    |
| 24-12           | d             | p. 530     | Preterm Breech Fetus                 |
| 24-13           | c             | p. 531     | Recommendations for<br>Delivery      |
| 24-14           | c             | p. 532     | Methods of Vaginal<br>Delivery       |

| Question number | Letter answer | Page cited | Header cited                                           |
|-----------------|---------------|------------|--------------------------------------------------------|
| 24-15           | a             | p. 532     | Fetal Monitoring                                       |
| 24-16           | b             | p. 533     | Figure 24-6                                            |
| 24-17           | a             | p. 535     | Figure 24-10                                           |
| 24-18           | c             | p. 537     | Modified Prague<br>Maneuver                            |
| 24-19           | c             | p. 538     | Entrapment of the<br>Aftercoming Head/<br>Figure 24-17 |
| 24-20           | a             | p. 540     | Factors Associated with<br>Successful Version          |
| 24-21           | b             | p. 540     | Indications                                            |
| 24-22           | b             | p. 538     | Analgesia and<br>Anesthesia                            |
| 24-23           | b             | p. 541     | Tocolysis                                              |
| 24-24           | c             | p. 542     | Internal Podalic Version                               |
| 24-25           | d             | p. 542     | Complications                                          |

## CHAPTER 25

# Cesarean Delivery and Peripartum Hysterectomy

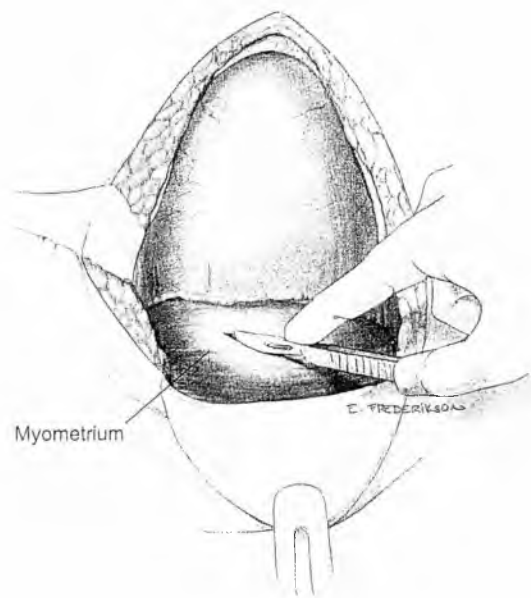
- 25-1.** Some have proposed that the origin of the word *cesarean* arose after Julius Caesar was born in this manner. Why is this explanation unlikely?
- Antiseptic technique was not yet available.
  - Abdominal deliveries had been described well before this time.
  - Julius Caesar was born preterm.
  - His mother survived for many years after his birth.
- 25-2.** The words *caesarean* and *section* are both derived from Latin verbs that mean what?
- To cut
  - To heal
  - To multiply
  - To assuage
- 25-3.** The cesarean delivery rate has steadily increased over the past 30 years with the exception of what epoch during which the vaginal birth after cesarean (VBAC) rate was increasing commensurate with a decreasing cesarean rate?
- 1970–1978
  - 1980–1988
  - 1989–1996
  - 2000–2008
- 25-4.** Reasons for increasing use of cesarean delivery include which of the following?
- An increasing percentage of births to multiparas
  - Declining average maternal age
  - Widespread use of electronic fetal monitoring
  - Higher rates of labor induction in women with preeclampsia
- 25-5.** Elective cesarean deliveries are increasingly being performed for what indication?
- Prevention of pelvic floor injury
  - Medically indicated preterm birth
  - Maternal request
  - All of the above
- 25-6.** What is the most frequent indication for cesarean delivery in the United States?
- Dystocia
  - Malpresentation
  - Nonreassuring fetal status
  - Cord prolapse
- 25-7.** Increasing use of electronic fetal monitoring has been associated with a decrease in which adverse perinatal outcome?
- Death
  - Neonatal seizures
  - Cerebral palsy
  - None of the above
- 25-8.** Practical strategies aimed at reducing the cesarean delivery rate include all **EXCEPT** which of the following?
- Peer review of cases
  - Increasing vaginal breech deliveries
  - Encouraging vaginal birth after cesarean delivery
  - Applying strict criteria to the diagnosis of dystocia
- 25-9.** Compared with vaginal delivery, the *maternal* risks of cesarean delivery include which of the following?
- Increased morbidity and mortality rates
  - Increased morbidity but equivalent mortality rates
  - Increased morbidity but decreased mortality rates
  - Equivalent morbidity and mortality rates
- 25-10.** Although controversial, cesarean delivery on maternal request should only be considered as an option when which of the following criteria have been met?
- The patient is concerned about inadequate pain control in labor.
  - The pregnancy has reached at least 39 weeks' gestation.
  - The mother plans to have several subsequent pregnancies.
  - There is a history of cerebral palsy in a previous child.

- 25-11.** During Pfannenstiel incision, which vessels should be anticipated halfway between the skin and fascia, several centimeters from the midline?
- Inferior epigastric
  - External pudendal
  - Superficial epigastric
  - Superficial circumflex iliac

- 25-12.** What benefit does Pfannenstiel incision offer over a midline incision?
- Improved cosmetic result
  - Less postoperative pain
  - Decreased rates of incisional hernia
  - All of the above
- 25-13.** Transverse uterine incisions are generally preferred to vertical incisions for all **EXCEPT** which of the following reasons?
- Decreased risk of rupture in subsequent pregnancies
  - Lower rates of postpartum metritis
  - Ease of closure
  - Less likely to result in incisional adhesions to bowel

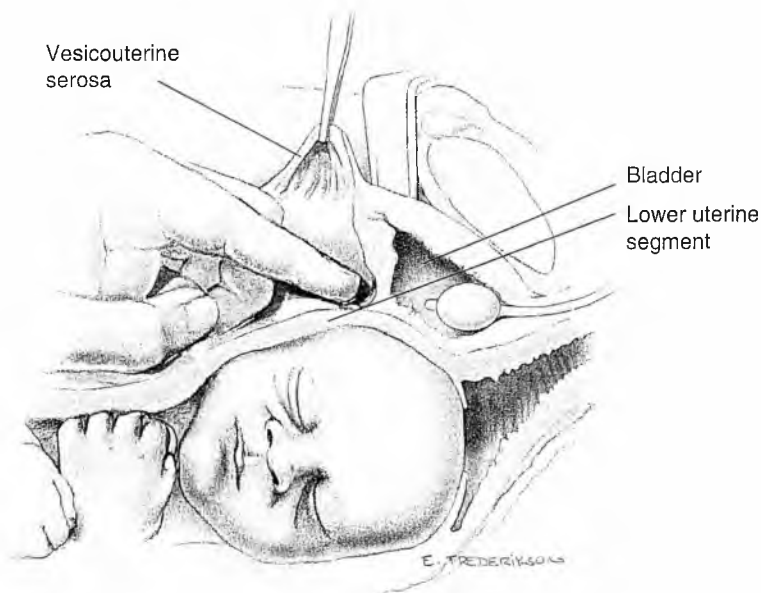
- 25-14.** The separation of the bladder from the lower uterine segment, as shown in the figure below, should not exceed what distance?
- 1 cm
  - 3 cm
  - 5 cm
  - 7 cm

- 25-15.** In deciding where to make the incision shown in this figure, when is it imperative to incise higher on the uterus to avoid laceration of the uterine vessels or unintended entry into the vagina?



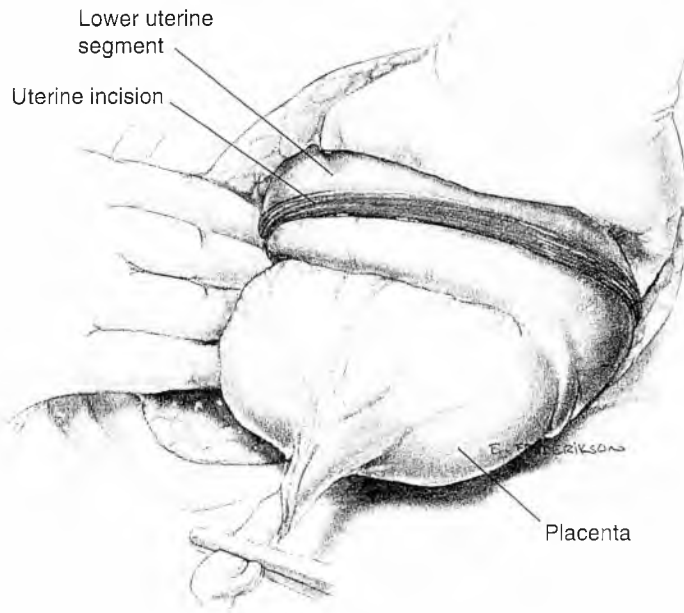
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- When the cervix is completely dilated
- When the fetus is in breech presentation
- When the mother is anemic
- When the cesarean is done prior to the onset of labor



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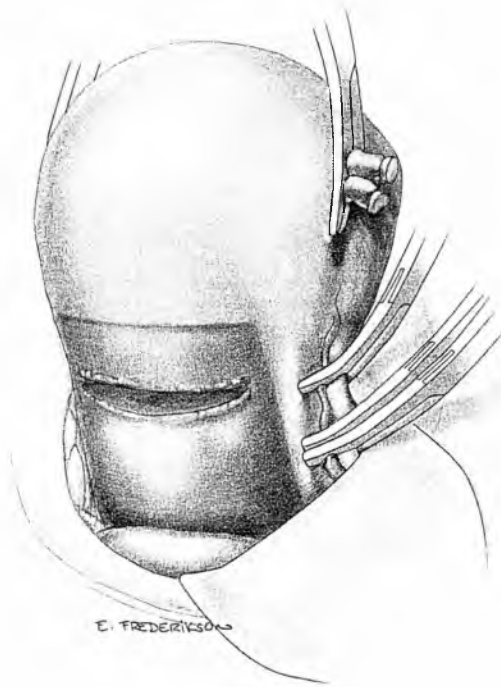




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- 25-16.** Spontaneous delivery of the placenta with fundal massage, as shown in the figure above, compared with manual extraction has been shown to reduce the risk of what complication?
- Deep venous thrombosis
  - Amnionic fluid embolism
  - Postpartum infection
  - Retained placenta
- 25-17.** Which of the following is a disadvantage to exteriorization of the uterus to repair the hysterotomy?
- Increased blood loss
  - Increased postoperative infection
  - Increased operative injury
  - Increased nausea and vomiting
- 25-18.** What is a potential advantage of parietal peritoneum closure prior to fascial closure?
- Decreased postoperative pain
  - Avoidance of distended bowel
  - Less adhesion formation
  - Shorter operative times
- 25-19.** Subcutaneous tissue greater than what depth should be closed with suture to avoid wound disruption?
- 2 cm
  - 4 cm
  - 6 cm
  - 10 cm
- 25-20.** All EXCEPT which of the following would be considered potential indications for a classical (vertical) hysterotomy?
- Densely adherent bladder
  - Cervical cancer
  - “Back-up” transverse fetal lie
  - Significant maternal obesity
- 25-21.** What is the most common complication in women who undergo peripartum hysterectomy?
- Urinary tract injury
  - Infection
  - Blood transfusion
  - Venous thromboembolism

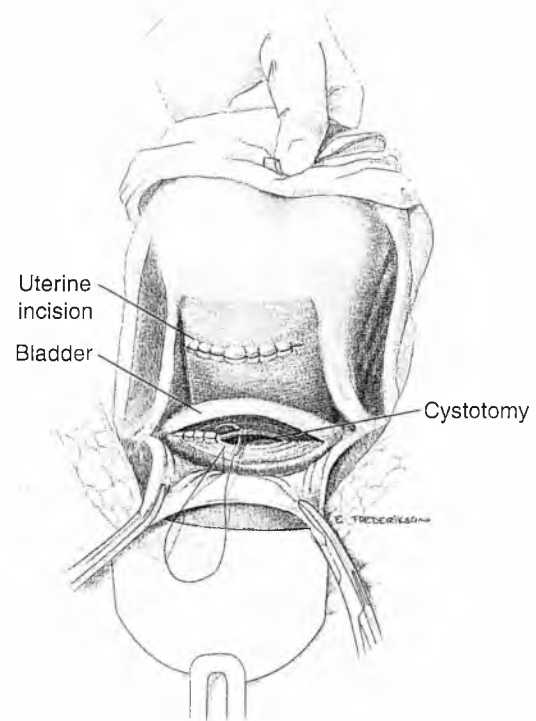
**25-22.** When performing the step shown in the image as a part of peripartum hysterectomy, particular care must be taken to avoid injury to what structure?



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- a. Bladder
- b. Bowel
- c. Urethra
- d. Ureter

**25-23.** When cystotomy complicates cesarean delivery, the bladder should be closed with a two- or three-layer running closure. Which layer is being closed in the image shown?



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- a. Muscularis
- b. Serosa
- c. Mucosa
- d. Visceral peritoneum

**25-24.** Women who have normal blood volume expansion during pregnancy and a hematocrit of at least 30 volumes percent will usually tolerate blood loss up to what volume without hemodynamic compromise?

- a. 2,000 mL
- b. 3,000 mL
- c. 4,000 mL
- d. 5,000 mL

**25-25.** Although fluid sequestration within the “third space” is not typically seen in women undergoing cesarean delivery, this extracellular fluid sequestration can be problematic in women who have what pathological process?

- a. Sepsis
- b. Preeclampsia
- c. Excessive hemorrhage
- d. All of the above

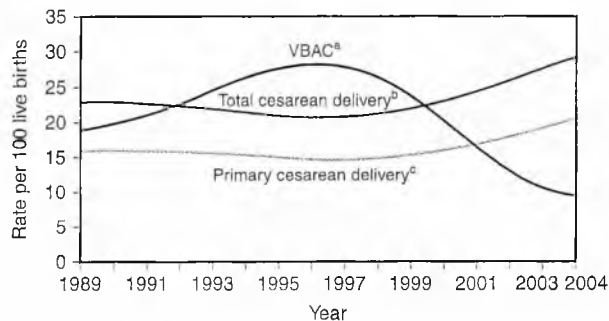
**Chapter 25 Answer Key**

| Question number | Letter answer | Page cited | Header cited                             | Question number | Letter answer | Page cited | Header cited                    |
|-----------------|---------------|------------|------------------------------------------|-----------------|---------------|------------|---------------------------------|
| 25-1            | d             | p. 544     | Historical Background                    | 25-13           | b             | p. 549     | Technique for Cesarean Delivery |
| 25-2            | a             | p. 544     | Historical Background                    | 25-14           | c             | p. 550     | Technique for Cesarean Delivery |
| 25-3            | c             | p. 544     | Contemporary Status of Cesarean Delivery | 25-15           | a             | p. 550     | Technique for Cesarean Delivery |
| 25-4            | c             | p. 545     | Contemporary Status of Cesarean Delivery | 25-16           | c             | p. 551     | Technique for Cesarean Delivery |
| 25-5            | d             | p. 545     | Contemporary Status of Cesarean Delivery | 25-17           | d             | p. 552     | Technique for Cesarean Delivery |
| 25-6            | a             | p. 546     | Contemporary Status of Cesarean Delivery | 25-18           | b             | p. 554     | Technique for Cesarean Delivery |
| 25-7            | d             | p. 546     | Contemporary Status of Cesarean Delivery | 25-19           | a             | p. 555     | Technique for Cesarean Delivery |
| 25-8            | b             | p. 547     | Contemporary Status of Cesarean Delivery | 25-20           | c             | p. 555     | Technique for Cesarean Delivery |
| 25-9            | a             | p. 547     | Contemporary Status of Cesarean Delivery | 25-21           | c             | p. 556     | Table 25-4                      |
| 25-10           | b             | p. 548     | Contemporary Status of Cesarean Delivery | 25-22           | d             | p. 556     | Peripartum Hysterectomy         |
| 25-11           | c             | p. 549     | Technique for Cesarean Delivery          | 25-23           | c             | p. 560     | Peripartum Hysterectomy         |
| 25-12           | d             | p. 549     | Technique for Cesarean Delivery          | 25-24           | a             | p. 561     | Peripartum Management           |
|                 |               |            |                                          | 25-25           | d             | p. 562     | Peripartum Management           |

## CHAPTER 26

### Prior Cesarean Delivery

- 26-1. In this figure, the trend from 1989 to 1995 may be explained by which of the following?



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- a. Increased demand for cesarean delivery by patients
  - b. Increased numbers of pregnancies secondary to fertility treatments
  - c. Increased awareness of the risks of vaginal birth after cesarean delivery
  - d. A recommendation from the American College of Obstetricians and Gynecologists (ACOG) that most women with a previous low transverse cesarean section should attempt vaginal birth in a subsequent pregnancy
- 26-2. What was the rate of vaginal birth after cesarean (VBAC) in 2007?
- a. 15%
  - b. 25%
  - c. 5.5%
  - d. 8.5%
- 26-3. What is the overall risk of uterine rupture during labor?
- a. 1%
  - b. 7%
  - c. 0.1%
  - d. 0.7%
- 26-4. According to the National Institute of Child Health and Human Development (NICHD) Maternal-Fetal Medicine Network study, which of the following maternal morbidities are increased with trial of labor?
- a. Ileus
  - b. Transfusion
  - c. Amnionic fluid embolus
  - d. Postoperative venous thrombosis and embolus
- 26-5. Which of the following statements regarding fetal and neonatal risks associated with trial of labor is true?
- a. Stillbirth rates are reduced.
  - b. Neonatal death rates are increased.
  - c. Rates of hypoxic ischemic encephalopathy are increased.
  - d. All of the above.
- 26-6. What is the risk of fetal death or injury in a woman with a prior low transverse cesarean delivery who desires an attempt at vaginal birth?
- a. 1 in 100
  - b. 1 in 500
  - c. 1 in 1,000
  - d. 1 in 5,000
- 26-7. Increased rates of maternal morbidity with trial of labor appear to include all EXCEPT which of the following?
- a. Infection
  - b. Transfusion
  - c. Hemorrhage
  - d. Hysterectomy
- 26-8. Highest patient satisfaction rates are reported in which group of women?
- a. Those who elect trial of labor
  - b. Those who elect repeat cesarean delivery
  - c. Those who elect trial of labor and have uncomplicated deliveries
  - d. Those who undergo repeat cesarean delivery following a failed trial of labor

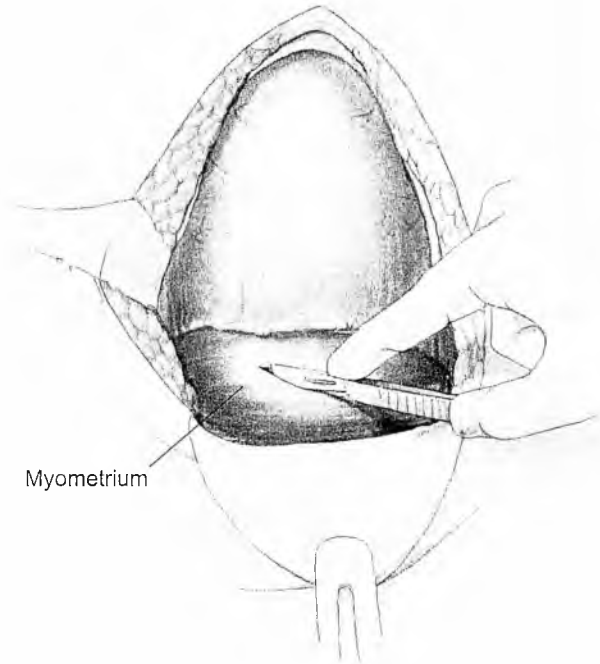
- 26-9. Factor(s) that modify the chance of having a successful VBAC include which of the following?
- Age
  - Body mass index
  - Prior cesarean indication
  - All of the above
- 26-10. Which of the following uterine incision type is **NOT** a contraindication for VBAC according to ACOG?
- Classical
  - T-shaped
  - Lower uterine segment vertical
  - None of the above
- 26-11. What is the estimated risk of this complication of a prior classical hysterotomy incision?



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- 32%
- 1–7%
- 4–9%
- 0.2–1.5%

- 26-12. This hysterotomy was originally described by which of the following obstetricians?



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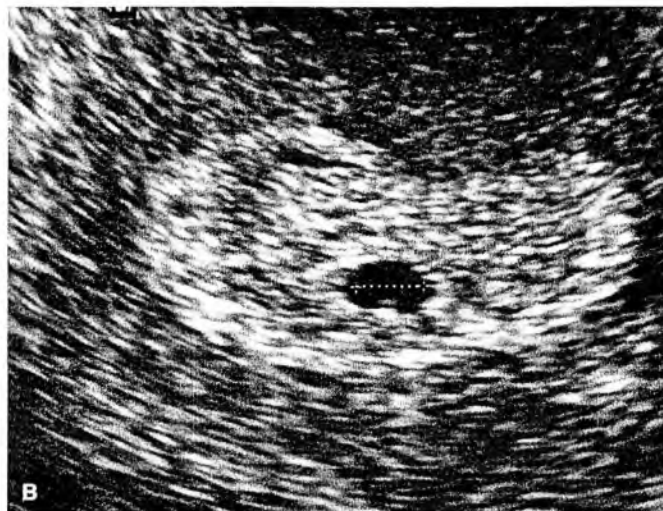
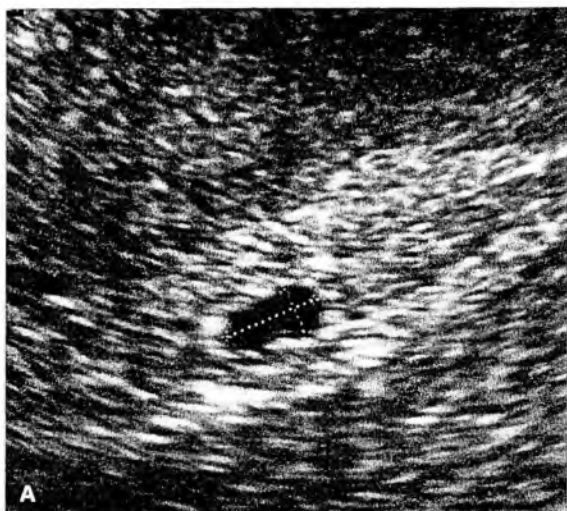
- Kerr
- Cragin
- William
- Pritchard

- 26-13. Which of the following statements regarding uterine incision closure is true?
- There is insufficient evidence to recommend routine double-layer closure.
  - Single-layer closure is associated with reduced rates of adhesion formation.
  - Single-layer closure is associated with significantly increased rates of uterine rupture.
  - Double-layer closure is recommended by ACOG in women desiring vaginal birth after cesarean for future pregnancies.
- 26-14. Following cesarean delivery, what is the minimum period a patient should wait to become pregnant again to reduce the risk of uterine rupture in that pregnancy?
- 3 months
  - 6 months
  - 12 months
  - 24 months

- 26-15.** As the number of prior cesarean deliveries increases, which of the following is true?
- The risk of uterine rupture remains unchanged.
  - The risk of uterine rupture is two- to threefold higher in some reports.
  - ACOG recommends encouraging attempts at vaginal birth to decrease operative complications.
  - None of the above.
- 26-16.** Which of the following is true regarding a prior vaginal delivery followed by a cesarean delivery?
- It increases the risk of uterine rupture in a subsequent pregnancy.
  - It is associated with improved success with a subsequent trial of labor.
  - It reduces the need for operative vaginal delivery in a subsequent pregnancy.
  - All of the above.
- 26-17.** The highest success rate for a trial of labor occurs in patients with which of the following indication for the previous cesarean delivery?
- Dystocia
  - Fetal distress
  - Breech presentation
  - History of myomectomy
- 26-18.** Factors in the current pregnancy that influence the VBAC success rates include all **EXCEPT** which of the following?
- Twin pregnancy
  - Preterm gestation
  - Maternal body mass index
  - Indication for previous cesarean section
- 26-19.** Adverse neonatal outcomes associated with elective cesarean delivery prior to 39 weeks include which of the following?
- Neonatal sepsis
  - Admission to neonatal intensive care unit (NICU)
  - Respiratory distress syndrome
  - All of the above
- 26-20.** The risk of uterine rupture increases by what percent if labor is induced or augmented in women with prior cesarean delivery?
- 10%
  - 50%
  - 75%
  - 100–200%
- 26-21.** ACOG recommends which of the following for labor induction in patients with prior cesarean delivery?
- Oxytocin
  - Misoprostol
  - Sequential use of prostaglandins and oxytocin
  - None of the above
- 26-22.** Common maternal signs and symptoms of uterine rupture include all **EXCEPT** which of the following?
- Chest pain
  - Hypotension
  - Vaginal bleeding
  - Increased intrauterine catheter pressure
- 26-23.** What is the most concerning complication related to multiple repeat cesarean deliveries?
- Bladder injury
  - Placenta accreta
  - Recurrent wound infection
  - Abdominal hernia development
- 26-24.** What percent of women with a single prior cesarean delivery will have the complication shown in this cesarean hysterectomy specimen?



- 2%
- 6%
- 10%
- 12%



- 26-25. A patient with a previous low transverse cesarean delivery of her first pregnancy presents for prenatal care and undergoes sonographic examination in the first trimester to confirm gestational dating. These sonographic images confirm the due date based on her last menstrual period (LMP). All **EXCEPT** which of the following are accurate statements regarding the timing of her repeat cesarean delivery?
- a. The cesarean delivery may be performed when she spontaneously labors.
  - b. The delivery can be scheduled after 39 weeks based on her LMP and these sonographic findings.
  - c. The delivery may be scheduled after fetal heart tones have been heard with a fetoscope for 20 weeks.
  - d. All of the above.

## Chapter 26 Answer Key

| Question number | Letter answer | Page cited | Header cited                   |
|-----------------|---------------|------------|--------------------------------|
| <b>26-1</b>     | <b>d</b>      | p. 565     | Introduction                   |
| <b>26-2</b>     | <b>d</b>      | p. 566     | Associated Risks               |
| <b>26-3</b>     | <b>d</b>      | p. 566     | Table 26-1                     |
| <b>26-4</b>     | <b>b</b>      | p. 566     | Table 26-1                     |
| <b>26-5</b>     | <b>c</b>      | p. 566     | Fetal Risk                     |
| <b>26-6</b>     | <b>c</b>      | p. 567     | Fetal Risk                     |
| <b>26-7</b>     | <b>d</b>      | p. 567     | Table 26-1                     |
| <b>26-8</b>     | <b>b</b>      | p. 567     | Patient Preference             |
| <b>26-9</b>     | <b>d</b>      | p. 568     | Figure 26-2                    |
| <b>26-10</b>    | <b>c</b>      | p. 568     | Type of Prior Uterine Incision |
| <b>26-11</b>    | <b>c</b>      | p. 569     | Table 26-3                     |
| <b>26-12</b>    | <b>a</b>      | p. 565     | Prior Cesarean Delivery        |
| <b>26-13</b>    | <b>a</b>      | p. 570     | Closure of Prior Incision      |
| <b>26-14</b>    | <b>b</b>      | p. 570     | Interdelivery Interval         |

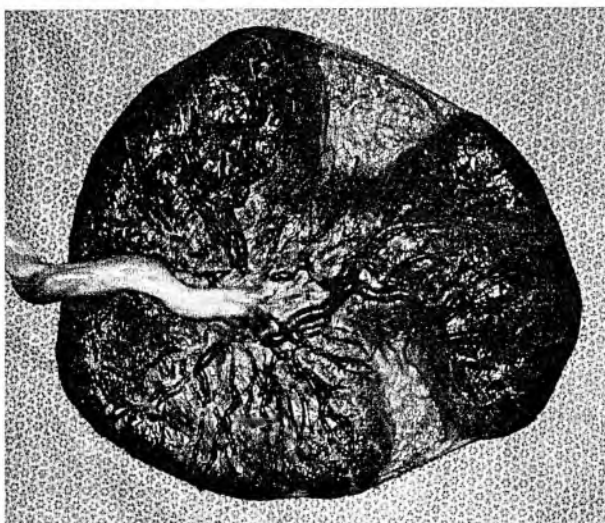
| Question number | Letter answer | Page cited | Header cited                                           |
|-----------------|---------------|------------|--------------------------------------------------------|
| <b>26-15</b>    | <b>b</b>      | p. 570     | Number of Prior Cesarean Incisions                     |
| <b>26-16</b>    | <b>b</b>      | p. 570     | Prior Vaginal Delivery                                 |
| <b>26-17</b>    | <b>c</b>      | p. 570     | Indication for Prior Cesarean Delivery                 |
| <b>26-18</b>    | <b>a</b>      | p. 570     | Multifetal Gestation                                   |
| <b>26-19</b>    | <b>d</b>      | p. 571     | Table 26-4                                             |
| <b>26-20</b>    | <b>d</b>      | p. 572     | Oxytocin                                               |
| <b>26-21</b>    | <b>a</b>      | p. 573     | Prostaglandins                                         |
| <b>26-22</b>    | <b>d</b>      | p. 573     | Diagnosis                                              |
| <b>26-23</b>    | <b>b</b>      | p. 574     | Complications with Multiple Repeat Cesarean Deliveries |
| <b>26-24</b>    | <b>b</b>      | p. 574     | Figure 26-4                                            |
| <b>26-25</b>    | <b>b</b>      | p. 571     | Table 26-5                                             |



## CHAPTER 27

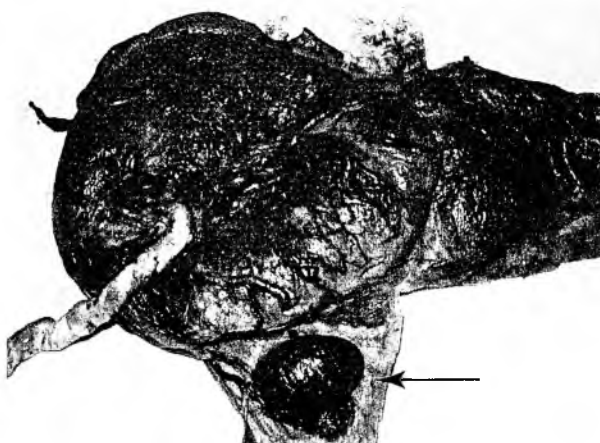
# Abnormalities of the Placenta, Umbilical Cord, and Membranes

**27-1.** Which type of placenta variation is shown in this image?



- a. Bilobate placenta
- b. Succenturiate lobe
- c. Placenta fenestrata
- d. Circumvallate placenta

**27-2.** Which type of placenta variation is shown in this image?



Contributed by Dr. Jaya George.

- a. Bilobate placenta
- b. Succenturiate lobe
- c. Placenta fenestrata
- d. Circumvallate placenta

**27-3.** Compared with a normally shaped placenta, which complication of third-stage labor is more common with a succenturiate lobe?

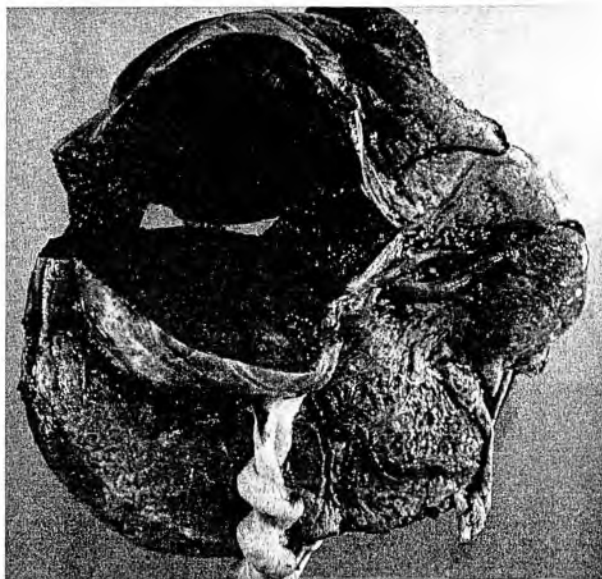
- a. Cord avulsion
- b. Uterine inversion
- c. Chorioamnionitis
- d. Retained placenta

**27-4.** Extrachorial placentation describes which of the following placental structural abnormalities?

- a. Chorion surface area exceeds that of amnion.
- b. Umbilical cord inserts at the outer placental border.
- c. Chorionic plate is smaller than the placental basal plate.
- d. Excessive folds of amnion are present at the cord insertion site.

- 27-5.** Which of the following is an example of extrachorial placentation?
- Placenta fenestrata
  - Succenturiate lobe
  - Circumvallate placenta
  - Placenta membranacea
- 27-6.** Which placental type is more frequently associated with antepartum fetal hemorrhage, placental abruption, preterm delivery, and fetal malformations?
- Bilobate placenta
  - Placenta fenestrata
  - Succenturiate placenta
  - Circumvallate placenta
- 27-7.** A thick fibrinous layer is deposited between the decidua and placental basal plate in which of the following?
- Breus mole
  - Marginal hematoma
  - Retroplacental hematoma
  - Maternal floor infarction
- 27-8.** Which of the following does **NOT** obstruct maternal blood flow to the placenta?
- Subamniotic hematoma
  - Maternal floor infarction
  - Retroplacental hematoma
  - Perivillous fibrinoid deposition
- 27-9.** Which of the following hematomas is typically iatrogenic and caused by vessel rupture near the placenta's cord insertion site?
- Marginal
  - Subchorial
  - Subamniotic
  - Retroplacental
- 27-10.** Striking enlargement of chorionic villi is more commonly associated with which of the following?
- Congenital syphilis
  - Severe preeclampsia
  - Maternal thrombophilia
  - Cholestasis of pregnancy

- 27-11.** Which of the following is depicted in this image?

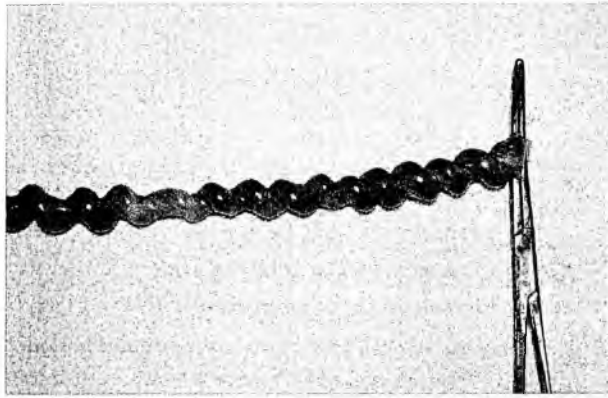


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- Brenner tumor
  - Chorioangioma
  - Congenital syphilis
  - Partial hydatidiform mole
- 27-12.** Large chorioangiomas cause fetal complications through which of the following mechanisms?
- Tumor metastasis to the fetus
  - Venous thrombi traveling to the fetus
  - Microabscesses seeding fetal circulation
  - Creation of placental arteriovenous shunting
- 27-13.** Which of the following may be associated with large chorioangiomas?
- Fetal hydrops
  - Gestational diabetes
  - Severe preeclampsia
  - Pulmonary embolism
- 27-14.** Which of the following cancers most frequently metastasizes to the placenta?
- Colon
  - Gastric
  - Ovarian
  - Melanoma

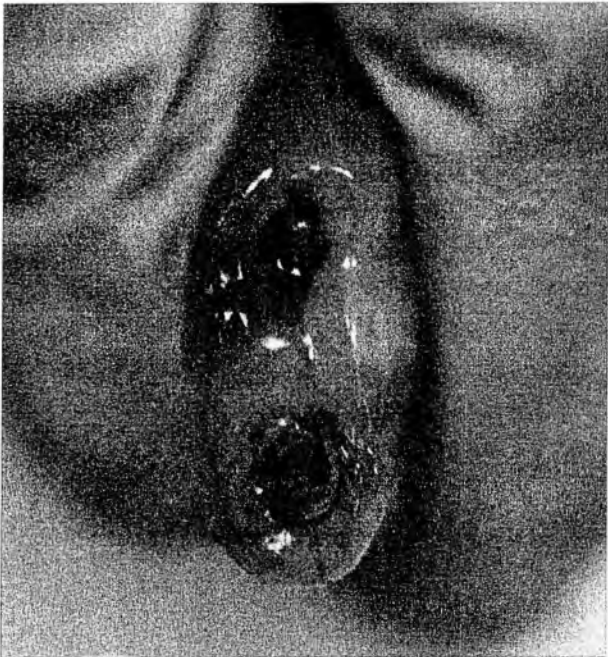
- 27-15.** In a fetus of which gestational age would meconium passage be most common?
- 16–24 weeks
  - 24–36 weeks
  - 36–40 weeks
  - >42 weeks
- 27-16.** One mechanism that is theorized to cause meconium passage by the fetus includes which of the following?
- Vagal stimulation
  - Fetal hyperglycemia
  - Immature gastrointestinal peristalsis
  - Increased gastrointestinal hyperosmolar load
- 27-17.** A postpartum maternal complication associated with meconium-stained fluid includes which of the following?
- Metritis
  - Cholelithiasis
  - Gastroenteritis
  - Pruritic urticarial papules and plaques of pregnancy
- 27-18.** Which route of bacterial inoculation causes most cases of chorioamnionitis?
- Direct spread through the fallopian tubes
  - Hematogenous spread from maternal blood
  - Ascension from the lower reproductive tract
  - Needle inoculation during intramniotic procedures
- 27-19.** Which of the following risk factors is most commonly associated with chorioamnionitis?
- Maternal drug abuse
  - Poor maternal hygiene
  - Prior cesarean delivery
  - Prolonged rupture of membranes
- 27-20.** With chorioamnionitis, fetal contact with bacteria through which of the following routes may lead to fetal infection?
- Aspiration
  - Swallowing
  - Hematogenous
  - All of the above
- 27-21.** Funisitis describes infection of which of the following?
- Decidua
  - Chorionic villi
  - Umbilical cord
  - Placental septum
- 27-22.** Amnion nodosum is a hallmark of which of the following?
- Oligohydramnios
  - Chorioamnionitis
  - Meconium staining
  - Placental abruption
- 27-23.** Amnion nodosum has which of the following characteristics?
- Generalized amnion thickening
  - Multiple, redundant folds of amnion
  - Multiple, small, tan amnionic lesions
  - Multiple, small fenestrations in the amniochorion
- 27-24.** Short umbilical cords may be associated with which of the following perinatal outcomes?
- Intrapartum distress
  - Fetal-growth restriction
  - Congenital malformations
  - All of the above
- 27-25.** A long umbilical cord may be associated with which of the following?
- Cord prolapse
  - Cord false knots
  - Cord pseudocysts
  - Velamentous insertion
- 27-26.** The umbilical cord coiling index is calculated by which of the following methods?
- Coils per each 3-cm segment of cord
  - Coils per each 1 g of cord weight
  - Coils divided by entire cord weight in grams
  - Coils divided by entire cord length in centimeters

27-27. The cord abnormality shown here has been linked with which of the following?



- a. Cleft palate
- b. Polyhydramnios
- c. Monozygotic twins
- d. Intrapartum fetal acidosis

27-28. Which of the following maternal pregnancy complication is **LEAST** frequently associated with the cord abnormality shown here?



- a. Diabetes
- b. Epilepsy
- c. Preeclampsia
- d. Herpes gestationis

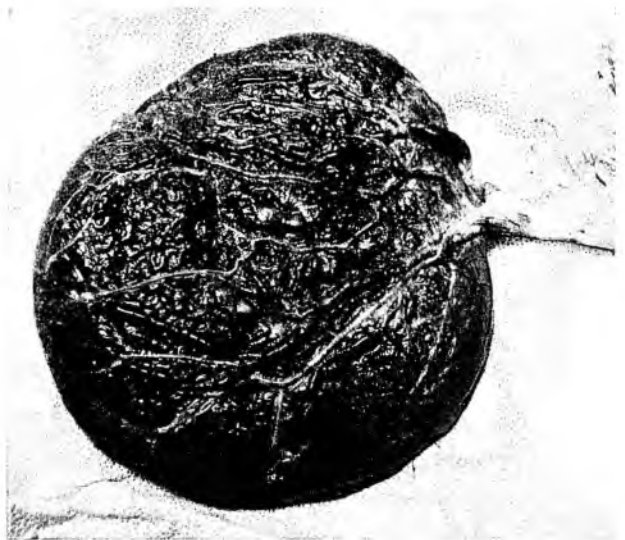
27-29. Which of the following can be associated with a single umbilical artery?

- a. Normal fetus
- b. Fetal aneuploidy
- c. Fetal structural anomaly
- d. All of the above

27-30. The theorized function of the Hyrtl anastomosis is equalization of which of the following?

- a. Oxygen diffusion across villi
- b. Osmotic gradient across fetal membranes
- c. Pressure gradient between spiral arteries
- d. Pressure gradient between umbilical arteries

27-31. This type of placenta is associated with a higher rate of which of the following?



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- a. Cord avulsion
- b. Fetal anomalies
- c. Uterine inversion
- d. Single umbilical artery cord

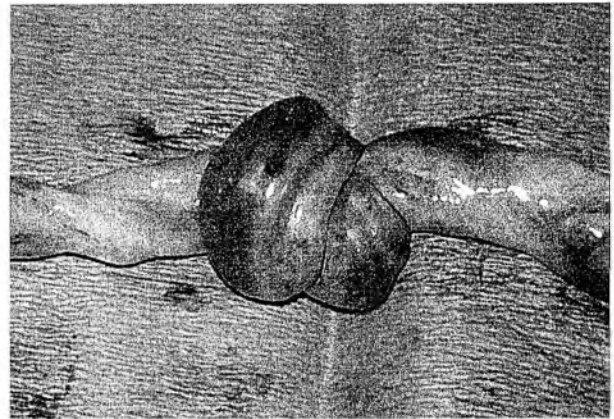
- 27-32. Which placental abnormality is commonly associated with this type of cord abnormality?



Contributed by Dr. Roxane Holt.

- a. Vasa previa
  - b. Placenta percreta
  - c. Circumvallate placenta
  - d. Maternal floor infarction
- 27-33. Pregnancies with vasa previa may be at greater risk for which of the following?
- a. Polyhydramnios
  - b. True cord knots
  - c. Mirror syndrome
  - d. Fetal hemorrhage
- 27-34. Vasa previa is most reliably diagnosed with which of the following diagnostic procedures?
- a. Amniotomy
  - b. Amniocentesis
  - c. Color Doppler sonography
  - d. Digital cervical examination
- 27-35. Which of the following improves rates of fetal survival in cases of vasa previa?
- a. Amniotomy
  - b. Pitocin induction
  - c. Cesarean delivery
  - d. External podalic version

- 27-36. This umbilical cord condition is associated with an increased risk of which of the following fetal complications?



- a. Stillbirth
  - b. Cerebral palsy
  - c. Amnionic band
  - d. Chromosomal anomalies
- 27-37. This umbilical cord structure is associated with which of the following?



- a. Stillbirth
  - b. Fetal trisomy
  - c. Cardiac anomalies
  - d. None of the above
- 27-38. Which of the following is most commonly associated with nuchal cord loops?
- a. True knots
  - b. Neonatal jaundice
  - c. Perinatal mortality
  - d. Variable fetal heart rate decelerations

- 27-39.** Umbilical cord stricture is commonly associated with which of the following?
- Stillbirth
  - Polyhydramnios
  - Circumvallate placenta
  - Congenital cytomegalovirus infection

- 27-40.** What is the etiology of true cysts of the umbilical cord?
- Intra-amnionic infection
  - Remnant of the allantois
  - Liquefaction of Wharton jelly
  - Excessive maternal progesterone levels

- 27-41.** Persistent or multiple umbilical cord cysts are associated with which of the following?
- Polyhydramnios
  - Maternal diabetes
  - Congenital syphilis
  - Chromosomal anomalies

- 27-42.** Which complication may be more commonly associated with this umbilical vessel abnormality (*arrows*) compared with a normal cord?



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- Torsion
  - Funistitis
  - Thrombosis
  - All of the above
- 27-43.** For which situation is the pathological examination of the placenta considered most informative and cost effective?
- Multifetal gestation
  - All obstetrical deliveries
  - Cholestasis of pregnancy
  - Maternal seizure disorder

**Chapter 27 Answer Key**

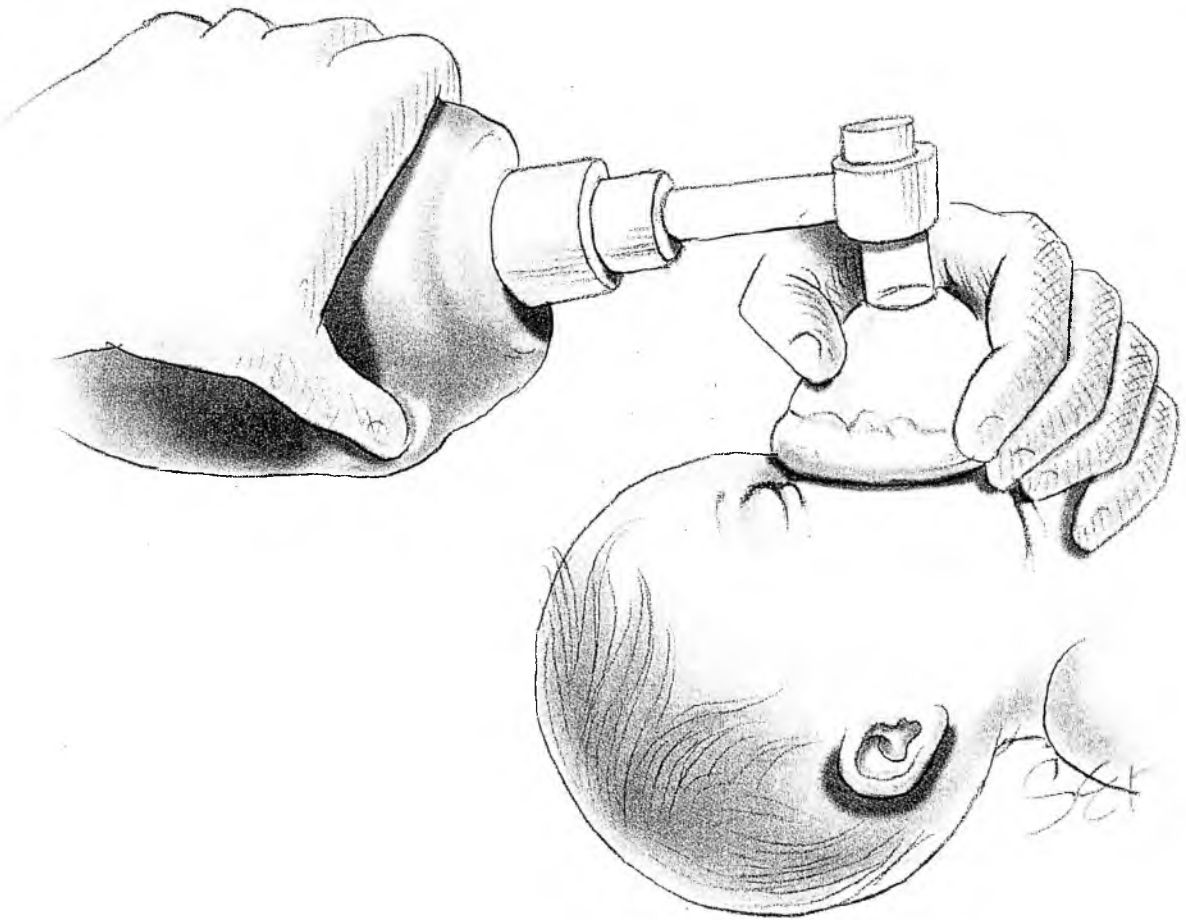
| Question number | Letter answer | Page cited | Header cited                           |
|-----------------|---------------|------------|----------------------------------------|
| 27-1            | a             | p. 577     | Multiple Placentas with a Single Fetus |
| 27-2            | b             | p. 577     | Succenturiate Lobe                     |
| 27-3            | d             | p. 577     | Succenturiate Lobe                     |
| 27-4            | c             | p. 578     | Extrachorial Placentation              |
| 27-5            | c             | p. 578     | Extrachorial Placentation              |
| 27-6            | d             | p. 578     | Extrachorial Placentation              |
| 27-7            | d             | p. 579     | Maternal Floor Infarction              |
| 27-8            | a             | p. 579     | Hematoma                               |
| 27-9            | c             | p. 580     | Hematoma                               |
| 27-10           | a             | p. 580     | Hypertrophic Villous Lesions           |
| 27-11           | b             | p. 580     | Chorioangioma                          |
| 27-12           | d             | p. 580     | Chorioangioma                          |
| 27-13           | a             | p. 580     | Chorioangioma                          |
| 27-14           | d             | p. 581     | Tumors Metastatic to the Placenta      |
| 27-15           | d             | p. 581     | Meconium Staining                      |
| 27-16           | a             | p. 581     | Meconium Staining                      |
| 27-17           | a             | p. 581     | Meconium Staining                      |
| 27-18           | c             | p. 581     | Chorioamnionitis                       |
| 27-19           | d             | p. 581     | Chorioamnionitis                       |

| Question number | Letter answer | Page cited | Header cited             |
|-----------------|---------------|------------|--------------------------|
| 27-20           | d             | p. 581     | Chorioamnionitis         |
| 27-21           | c             | p. 581     | Chorioamnionitis         |
| 27-22           | a             | p. 581     | Other Abnormalities      |
| 27-23           | c             | p. 581     | Other Abnormalities      |
| 27-24           | d             | p. 581     | Length                   |
| 27-25           | a             | p. 581     | Length                   |
| 27-26           | d             | p. 582     | Cord Coiling             |
| 27-27           | d             | p. 582     | Cord Coiling             |
| 27-28           | d             | p. 582     | Single Umbilical Artery  |
| 27-29           | d             | p. 582     | Single Umbilical Artery  |
| 27-30           | d             | p. 582     | Hyrtil Anastomosis       |
| 27-31           | a             | p. 582     | Marginal Insertion       |
| 27-32           | a             | p. 583     | Velamentous Insertion    |
| 27-33           | d             | p. 583     | Vasa Previa              |
| 27-34           | c             | p. 583     | Vasa Previa              |
| 27-35           | c             | p. 583     | Vasa Previa              |
| 27-36           | a             | p. 584     | Knots                    |
| 27-37           | d             | p. 584     | Knots                    |
| 27-38           | d             | p. 584     | Loops                    |
| 27-39           | a             | p. 584     | Umbilical Cord Stricture |
| 27-40           | b             | p. 584     | Cysts                    |
| 27-41           | d             | p. 584     | Cysts                    |
| 27-42           | c             | p. 584     | Vessel Dilatation        |
| 27-43           | a             | p. 585     | Pathological Examination |



SECTION 5

# FETUS AND NEWBORN



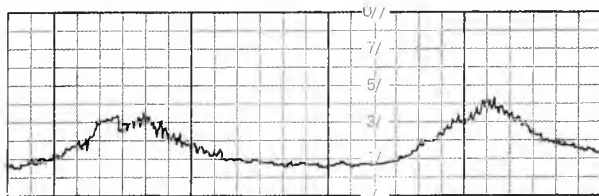
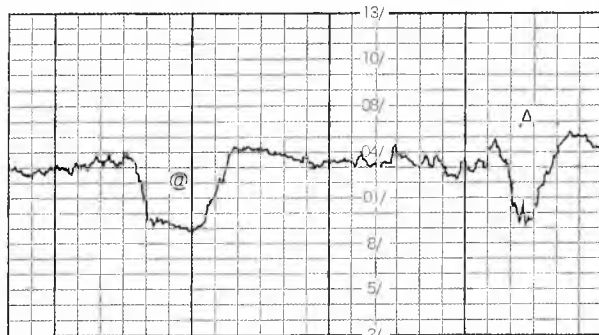


## CHAPTER 28

# The Newborn Infant

- 28-1.** Which of the following is indicated in a neonate whose mother received intravenous narcotics 2 hours before delivery?
- Naloxone
  - Epinephrine
  - Isotonic crystalloid
  - Sodium bicarbonate
- 28-2.** The purpose of assigning the 1 minute Apgar score is to identify neonates with which of the following characteristics?
- Would benefit from intubation
  - Need immediate resuscitation
  - Need to be admitted to the neonatal intensive care unit (NICU)
  - Are at high risk for intraventricular hemorrhage
- 28-3.** Delay in removal of residual fluid from alveoli contributes to the development of which of the following?
- Pneumonia
  - Respiratory distress syndrome
  - Persistent pulmonary hypertension
  - Transient tachypnea of the newborn
- 28-4.** The appropriate rate for positive pressure ventilation in the neonate during resuscitation is?
- 20–30 breaths per minute
  - 30–60 breaths per minute
  - 60–75 breaths per minute
  - 80–100 breaths per minute
- 28-5.** Indications for intubation of the neonate may include all **EXCEPT** which of the following?
- Birthweight <1,000 g
  - Need for chest compressions
  - Congenital renal abnormality
  - Prolonged mask-and-bag ventilation
- 28-6.** What is the appropriate rate of chest compressions and ventilation per minute during neonatal resuscitation?
- 90 compressions and 30 breaths
  - 60 compressions and 60 breaths
  - 90 compressions and 45 breaths
  - 60 compressions and 30 breaths
- 28-7.** What is the risk of neonatal death in a term newborn with a 5-minute Apgar score <4?
- 1 in 4
  - 1 in 10
  - 1 in 20
  - 1 in 100
- 28-8.** According to the American College of Obstetricians and Gynecologists (ACOG), a neonate with perinatal asphyxia severe enough to result in neurological injury should demonstrate all **EXCEPT** which of the following?
- Abnormal neurologic examination
  - Multisystem organ dysfunction
  - Acidemia with a cord pH <7.1
  - Apgar score <4 at 10 minutes of life

- 28-9. Demonstrated in this figure, the most common cause of respiratory acidemia in a newborn is which of the following?



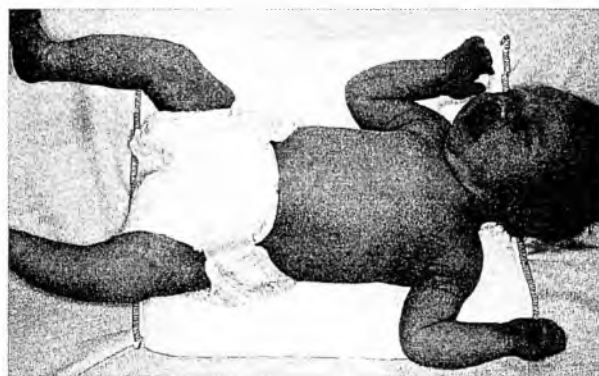
Künzel W: Fetal heart rate alterations in partial and total cord occlusion. In Kunzel W (ed): *Fetal Heart Rate Monitoring: Clinical Practice and Pathophysiology*. Berlin, Springer-Verlag, 1985, p 114. With kind permission of Springer Science+Business Media.

- a. Placental abruption
  - b. Acute cord prolapse
  - c. Chronic placental infarction
  - d. Transient umbilical cord compression
- 28-10. ACOG recommends that a cord blood gas and pH evaluation be obtained in which of the following clinical settings?
- a. All deliveries
  - b. Twin gestations
  - c. Maternal diabetes
  - d. Breech presentations
- 28-11. Current Centers for Disease Control and Prevention (CDC) recommendations for prophylactic treatment of gonococcal ophthalmia neonatorum include which of the following?
- a. 1% Tetracycline ophthalmic solution
  - b. 1% Silver nitrate ophthalmic solution
  - c. 1% Erythromycin ophthalmic solution
  - d. 2.5% Povidone-iodine ophthalmic solution
- 28-12. What percent of neonates delivered vaginally of mothers with active chlamydial infection will develop conjunctivitis?
- a. 1–5%
  - b. 10–16%
  - c. 12–25%
  - d. 22–35%

- 28-13. Approximately one-third of all infants born in the United States are exclusively breastfed for how long?
- a. 1 year
  - b. 1 month
  - c. 3 months
  - d. 6 months

- 28-14. In the normal newborn, what change in birthweight is expected by the end of the first year of life?
- a. Double
  - b. Triple
  - c. Quadruple
  - d. None of the above

- 28-15. Which of the following do **NOT** contribute to the development of the neonatal complication seen in this yellow-skinned infant below?



Reproduced, with permission, from Knoop KJ, Stack LB, Storrow AB, et al: *Atlas of Emergency Medicine*, 3rd ed. New York, McGraw-Hill 2010:408. Photo contributor: Kevin J. Knoop, MD, MS.

- a. Hepatic immaturity
  - b. Red blood cell destruction
  - c. Reduced renal excretion of bilirubin
  - d. Degradation of bilirubin glucuronide in the intestines
- 28-16. Reported benefits of male circumcision include a reduced incidence of all **EXCEPT** which of the following?
- a. Phimosis
  - b. Penile cancer
  - c. Urinary tract infections
  - d. Cervical cancer in female partners

- 28-17.** Which of the following statements regarding anesthesia for circumcision is true?
- Use of sucrose pacifiers offers no benefit.
  - Dorsal penile block reduces behavioral distress in neonates.
  - Local infiltration using lidocaine with epinephrine is safe and effective.
  - No anesthesia is necessary because the procedure is brief.

- 28-18.** Neonatal discharge from the hospital within 30 hours is associated with which of the following?

- Increased breastfeeding rate
- Increased mortality rate at 1 year
- Decreased readmission rate
- Reduced mortality rate at 28 days of life

- 28-19.** An injection of which of the following is given shortly after birth to reduce hemorrhagic disease of the newborn?

- Iron
- Vitamin K
- Vitamin B<sub>12</sub>
- Immunoglobulin

- 28-20.** Which of the following are signs of physical maturity in a newborn?

- Flat pinna
- Fused eyes
- Translucent skin
- Descended testes

- 28-21.** What is the etiology of the neonatal complication seen in the chest radiograph here?



Reproduced, with permission, from Tintinalli JE, Kelen GD, Stapczynski JS: Tintinalli's Emergency Medicine: A Comprehensive Study Guide, 6th ed. New York, McGraw-Hill, 2004. Figure 4-1.

- Increased alveolar fluid
- Increased mucus plugging
- Decreased alveolar surfactant
- Decreased alveolar surface tension

- 28-22.** Obstacles to effective neonatal ventilation may include all **EXCEPT** which of the following?

- Fetal macrosomia
- Fetal pneumothorax
- Meconium aspiration
- Poor fetal positioning

- 28-23.** Which of the following is **NOT** part of the Apgar score?

- Color
- Heart rate
- Gestational age
- Respiratory effort

- 28-24.** In addition to hypoxia, an Apgar score may also be affected by all **EXCEPT** which of the following?

- Ethnicity
- Prematurity
- Fetal anomalies
- Maternal narcotic use

- 28-25. Which umbilical artery blood gas represents the expected mean in a normal term neonate?
- a. 7.35,  $p\text{CO}_2$  49 mm Hg,  $\text{HCO}_3$  10 mEq/L
  - b. 7.35,  $p\text{CO}_2$  60 mm Hg,  $\text{HCO}_3$  23 mEq/L
  - c. 7.28,  $p\text{CO}_2$  60 mm Hg,  $\text{HCO}_3$  10 mEq/L
  - d. 7.28,  $p\text{CO}_2$  49 mm Hg,  $\text{HCO}_3$  23 mEq/L

- 28-26. What is the appropriate therapy for the condition shown in this photograph of a fetus whose mother had untreated gonorrhea?



Reproduced, with permission, from Johns KJ. *Eye Care Skills: Presentations for Physicians and Other Health Care Professionals*, American Academy of Ophthalmology, 2009.

- a. 50,000 units penicillin G IM
- b. 0.5% erythromycin ophthalmic ointment
- c. Single 25–50 mg/kg dose of ceftriaxone IM
- d. None of the above

## Chapter 28 Answer Key

| Question number | Letter answer | Page cited | Header cited                                      | Question number | Letter answer | Page cited | Header cited                |
|-----------------|---------------|------------|---------------------------------------------------|-----------------|---------------|------------|-----------------------------|
| 28-1            | a             | p. 593     | Medications and Volume Expansion                  | 28-13           | c             | p. 599     | Feeding                     |
| 28-2            | b             | p. 594     | Apgar Score                                       | 28-14           | b             | p. 600     | Initial Weight Loss         |
| 28-3            | d             | p. 590     | Stimuli to Breathe Air                            | 28-15           | c             | p. 601     | Icterus Neonatorum          |
| 28-4            | b             | p. 591     | Ventilation                                       | 28-16           | c             | p. 601     | Circumcision                |
| 28-5            | c             | p. 591     | Endotracheal Intubation                           | 28-17           | b             | p. 602     | Anesthesia for Circumcision |
| 28-6            | a             | p. 593     | Chest Compressions                                | 28-18           | b             | p. 602     | Hospital Discharge          |
| 28-7            | a             | p. 595     | Apgar Score                                       | 28-19           | b             | p. 598     | Vitamin K                   |
| 28-8            | c             | p. 595     | Apgar Score                                       | 28-20           | d             | p. 600     | Figure 28-6                 |
| 28-9            | d             | p. 597     | Clinical Significance of Acidemia                 | 28-21           | c             | p. 590     | Stimuli to Breathe Air      |
| 28-10           | b             | p. 598     | Recommendations for Cord Blood Gas Determinations | 28-22           | a             | p. 591     | Ventilation                 |
| 28-11           | a             | p. 598     | Gonococcal Infection                              | 28-23           | c             | p. 594     | Table 28-2                  |
| 28-12           | c             | p. 598     | Chlamydia Infection                               | 28-24           | a             | p. 595     | Apgar Score                 |
|                 |               |            |                                                   | 28-25           | d             | p. 596     | Table 28-3                  |
|                 |               |            |                                                   | 28-26           | c             | p. 598     | Gonococcal Infection        |

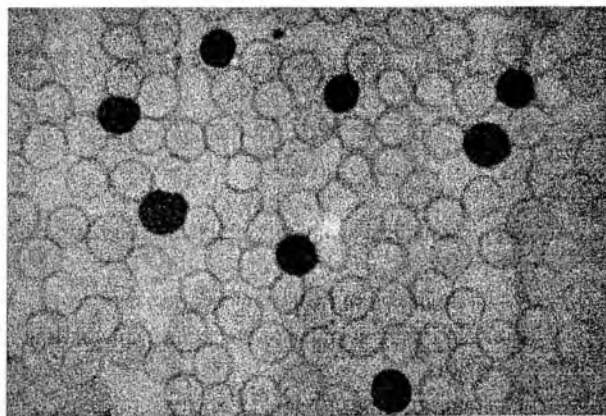
## CHAPTER 29

# Diseases and Injuries of the Fetus and Newborn

- 29-1.** Which statement about respiratory distress syndrome (RDS) is true?
- It is more common in females than males.
  - Black infants are more severely affected than white infants.
  - Despite the use of antenatal corticosteroids and newborn surfactant therapy, mortality rates have increased.
  - It can develop in term newborns, especially in the setting of sepsis or meconium aspiration.
- 29-2.** Which of the following has been credited with the largest drop in infant mortality rates in 25 years?
- Inhaled nitric oxide
  - Surfactant therapy
  - Antibiotics
  - High-frequency oscillatory ventilation
- 29-3.** The American College of Obstetricians and Gynecologists (ACOG) recommends antenatal corticosteroid therapy for women at risk for preterm delivery at what gestational ages?
- 24–34 weeks
  - 20–30 weeks
  - 22–32 weeks
  - 26–36 weeks
- 29-4.** Blood or meconium contamination of amniotic fluid has what effect on the lecithin/sphingomyelin (L/S) ratio?
- The contamination increases it.
  - The contamination decreases it.
  - The contamination causes no change.
  - The contamination can increase or decrease it, depending on the amount.
- 29-5.** Which of the following statements about intraventricular hemorrhage (IVH) is true?
- Very-low-birth weight infants typically have late onset hemorrhage.
  - The severity of IVH cannot be assessed by neuroimaging studies.
  - Preterm white infants are at disparate risk for IVH.
  - The incidence depends on the gestational age at birth.
- 29-6.** Which of the following statements about periventricular leukomalacia is true?
- Cysts seen on neuroimaging studies require at least 2 days to develop.
  - It is associated with cerebral palsy.
  - Cyst size does not correlate with risk of cerebral palsy.
  - Symmetrical cystic lesions are a good prognostic indicator.
- 29-7.** Which of the following factors is necessary to suggest that brain injury resulted from birth asphyxia?
- Umbilical cord arterial blood sample with pH <7.0
  - Apgar score of 0–3 at >5 minutes
  - Evidence of neonatal neurological sequelae or organ dysfunction
  - All of the above
- 29-8.** What percentage of neonatal encephalopathy cases result from an event prior to the onset of labor?
- 20%
  - 50%
  - 70%
  - 90%
- 29-9.** Which of the following types of cerebral palsy is the least common?
- Diplegia
  - Hemiplegia
  - Spastic quadriplegia
  - Choreoathetoid types

- 29-10.** What percentage of cerebral palsy cases have an intelligence quotient (IQ) of less than 50?
- 25%
  - 50%
  - 75%
  - 95%
- 29-11.** Which of the following is not strongly predictive of cerebral palsy?
- Obstetrical complications
  - Gestational age of <32 weeks
  - Birthweight of <2,000 g
  - Congenital malformation
- 29-12.** What umbilical cord pH is the threshold for clinically significant acidemia?
- 7.35
  - 7.25
  - 7.10
  - 7.00
- 29-13.** Which imaging study is the best diagnostic method to identify and characterize neonatal strokes?
- Computed tomography (CT) scan
  - Magnetic resonance imaging (MRI)
  - Sonography
  - All equivalent
- 29-14.** Fetal red blood cells are more resistant to acid elution because of:
- Hemoglobin A
  - Hemoglobin C
  - Hemoglobin F
  - Hemoglobin S
- 29-15.** Kleihauer–Betke test is less accurate if the mother has which of the following disorders?
- Iron-deficiency anemia
  - Hemoglobinopathy
  - Malaria
  - Polycythemia

- 29-16.** In this Kleihauer–Betke stain, what are the dark red cells?



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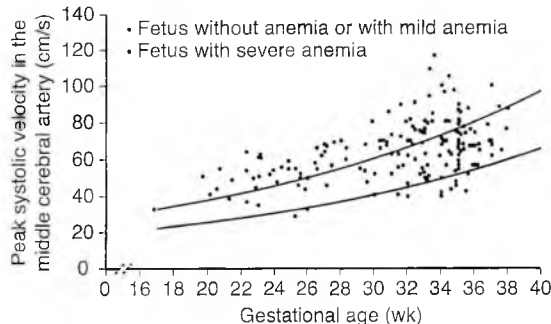
- Fetal white cells
  - Maternal white cells
  - Fetal red cells
  - Maternal red cells
- 29-17.** For a 3,000-gram fetus, what is the fetal-placental blood volume at term?
- 375 mL
  - 450 mL
  - 525 mL
  - 600 mL
- 29-18.** Which of the following statements regarding ABO incompatibility disease is true?
- It is not seen until pregnancy with the second child.
  - It frequently becomes more severe in future pregnancies.
  - Close monitoring for fetal hemolysis is required.
  - 20% of all infants have ABO incompatibility, but only 5% are clinically affected.
- 29-19.** A woman at 18 weeks' gestation has an anti-Kell titer of 1:8. At this point, what is the appropriate management step?
- Serial titers until 1:16
  - Amniocentesis
  - Cordocentesis
  - Cordocentesis and measurement of middle cerebral artery peak systolic velocities (MCA PSV)

- 29-20. The black arrows in this figure identify which of the following?



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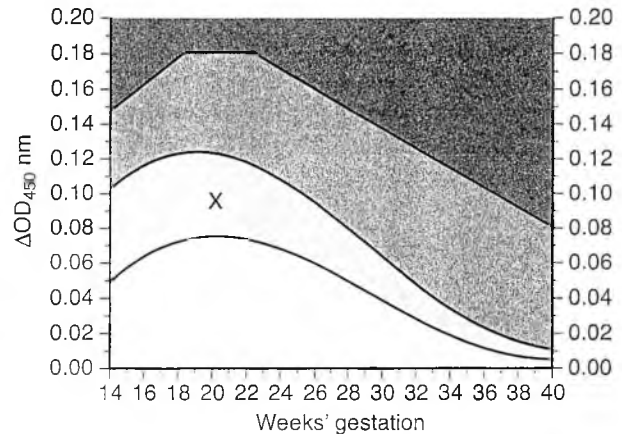
- a. Blood
  - b. Ascites
  - c. Meconium
  - d. Air
- 29-21. What is the critical titer for anti-D antibodies?
- a. 1:4
  - b. 1:8
  - c. 1:16
  - d. 1:32
- 29-22. MCA PSV is measured in a 26-week fetus that may have anemia because of isoimmunization. The PSV is 60 cm/s. Using the figure below (red line shows 1.5 MoM), what is the next management step?



Reprinted from Oepkes D, Seaward PG, Vandenbussche FP, et al: Doppler ultrasonography versus amniocentesis to predict fetal anemia. *N Engl J Med* 355(2):156-164, with permission. © 2006 Massachusetts Medical Society. All rights reserved.

- a. Repeat in 1 week
- b. Amniocentesis for  $\Delta OD_{450}$  amniotic fluid spectral analysis
- c. Fetal blood sampling
- d. Delivery

- 29-23. Shown in this diagram is the Queenan curve, which is a Liley-type curve that begins at 14 weeks' gestation. The zone marked with an "X" is considered which of the following?



This figure was published in *American Journal of Obstetrics & Gynecology*, Vol. 168, No. 5, JT Queenan, PT Thomas, TP Tomai, et al: Deviation of amniotic fluid optical density at a wavelength of 450 nm in Rh isoimmunized pregnancies from 14 to 40 weeks' gestation: A proposal for clinical management, pp. 1370-1376, © Elsevier 1993.

- a. An indeterminate zone where bilirubin concentrations do not accurately predict fetal hemoglobin concentration
  - b. A zone where one would expect the fetus to be Rh negative and thus unaffected
  - c. A zone where one would expect the fetus to be Rh positive and thus affected
  - d. The most dangerous zone where intrauterine death is likely
- 29-24. A 300- $\mu$ g dose of anti-D immunoglobulin will protect the average-sized mother from what volume of fetal hemorrhage?
- a. 15 mL of fetal whole blood
  - b. 60 mL of D-positive red cells
  - c. 30 mL of D-positive red cells
  - d. 30 mL of fetal whole blood
- 29-25. As part of routine prenatal care, a woman is tested for D-antigen erythrocytes and irregular antibodies. The test comes back D<sup>u</sup>-positive. Which of the following is true?
- a. She is D-positive and does not need immunoglobulin.
  - b. She is weakly D-positive and needs immunoglobulin.
  - c. She does not need immunoglobulin unless the baby is D-positive.
  - d. The father of the baby needs to be tested for his D-antigen status.



- 29-26.** What is the most common cause of nonimmune hydrops fetalis?
- Infection
  - Chromosomal disorder
  - Twin-twin transfusion syndrome
  - Cardiovascular disorder
- 29-27.** Which of the following are differences between neonatal alloimmune thrombocytopenia (AIT) and immune thrombocytopenia?
- AIT can be anticipated in the prenatal period.
  - AIT is characterized by more severe maternal thrombocytopenia.
  - In cases of AIT, fetal thrombocytopenia is milder.
  - In cases of AIT, fetal intracranial hemorrhage occurs in 20% of severely affected fetuses as early as 20 weeks' gestation.
- 29-28.** While evaluating a stillborn, you take a sample of the fetus for karyotype. Which of the following choices of fetal tissue is **LEAST** likely to yield information?
- Fetal blood obtained from the umbilical cord placed in a heparinized tube
  - Fetal blood obtained by cardiac puncture placed in a heparinized tube
  - Umbilical cord segment, 1.5 cm long, washed with sterile saline and placed in lactated Ringer
  - Fetal skin, washed with sterile saline and placed in formalin
- 29-29.** A 25-year-old G2P0 presents for prenatal care at 18 weeks' gestation. She has a history of one unexplained, term stillbirth. An autopsy performed on that infant revealed no abnormalities. The patient has no medical problems. She is appropriately concerned for this pregnancy. An acceptable management plan for this pregnancy would include which of the following?
- Delivery at 34 weeks
  - Antepartum surveillance starting at 32 weeks
  - Parental karyotyping
  - Weekly amniocentesis to test for lung maturity starting at 32 weeks

- 29-30.** The newborn in this photograph was born by forceps-assisted vaginal delivery that was complicated by injury to what nerve?



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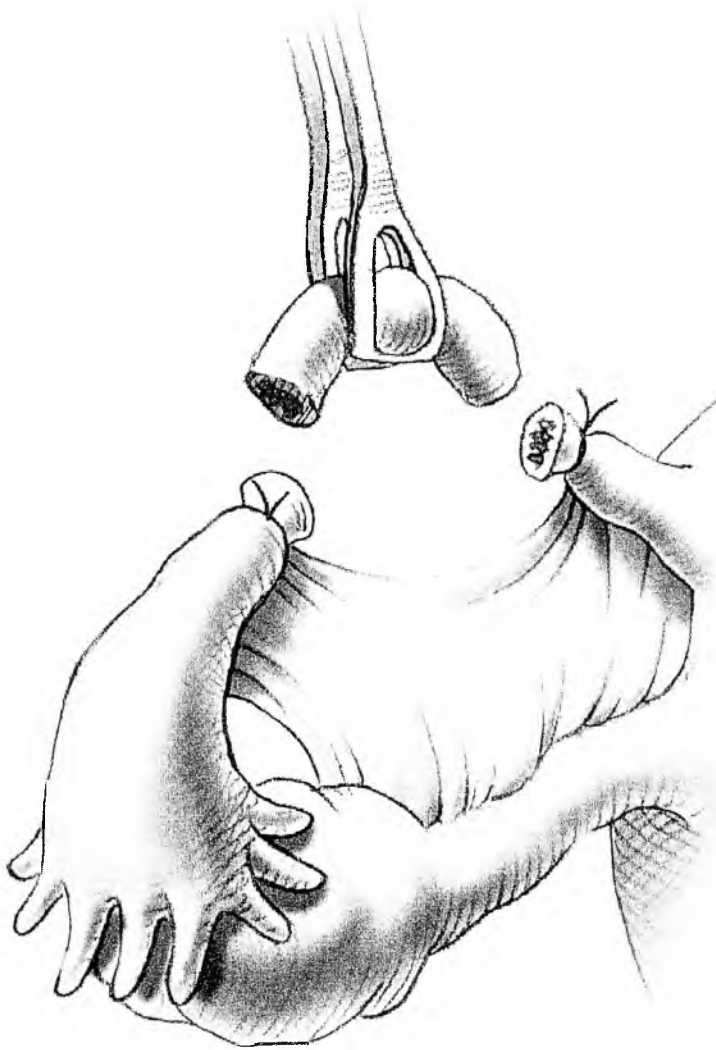
- Cranial nerve V
  - Cranial nerve VI
  - Cranial nerve VII
  - Cranial nerve VIII
- 29-31.** Which type of fracture is most common in the newborn?
- Humeral fracture
  - Femoral fracture
  - Mandibular fracture
  - Clavicular fracture

## Chapter 29 Answer Key

| Question number | Letter answer | Page cited | Header cited                     | Question number | Letter answer | Page cited | Header cited                                 |
|-----------------|---------------|------------|----------------------------------|-----------------|---------------|------------|----------------------------------------------|
| 29-1            | d             | p. 605     | Respiratory Distress Syndrome    | 29-16           | c             | p. 617     | Figure 29-5                                  |
| 29-2            | b             | p. 606     | Surfactant Prophylaxis           | 29-17           | a             | p. 618     | Fetal-to-Maternal Hemorrhage Management      |
| 29-3            | a             | p. 606     | Respiratory Distress Syndrome    | 29-18           | d             | p. 619     | Isoimmunization                              |
| 29-4            | b             | p. 607     | Amniocentesis for Lung Maturity  | 29-19           | d             | p. 620     | Kell Antigen                                 |
| 29-5            | d             | p. 609     | Intraventricular Hemorrhage      | 29-20           | b             | p. 621     | Figure 29-7                                  |
| 29-6            | b             | p. 610     | Periventricular Leukomalacia     | 29-21           | c             | p. 622     | Identification of the Isoimmunized Pregnancy |
| 29-7            | d             | p. 611     | Brain Disorders                  | 29-22           | c             | p. 623     | Figure 29-9                                  |
| 29-8            | c             | p. 612     | Neonatal Encephalopathy          | 29-23           | a             | p. 623     | Figure 29-10                                 |
| 29-9            | d             | p. 612     | Cerebral Palsy                   | 29-24           | d             | p. 624     | Anti-D Immunoglobulin                        |
| 29-10           | a             | p. 612     | Cerebral Palsy                   | 29-25           | a             | p. 625     | D <sup>u</sup> -Antigen                      |
| 29-11           | a             | p. 612     | Cerebral Palsy                   | 29-26           | d             | p. 626     | Table 29-6                                   |
| 29-12           | d             | p. 614     | Umbilical Cord Blood Gas Studies | 29-27           | d             | p. 629     | Alloimmune Thrombocytopenia                  |
| 29-13           | b             | p. 614     | Neuroimaging Studies             | 29-28           | d             | p. 632     | Evaluation of the Stillborn                  |
| 29-14           | c             | p. 617     | Infant Outcomes in Extreme PTB   | 29-29           | b             | p. 633     | Management of Subsequent Pregnancy           |
| 29-15           | b             | p. 617     | Fetal-to-Maternal Hemorrhage     | 29-30           | c             | p. 636     | Figure 29-13                                 |
|                 |               |            |                                  | 29-31           | d             | p. 637     | Skeletal and Muscle Injuries                 |

SECTION 6

# PUERPERIUM

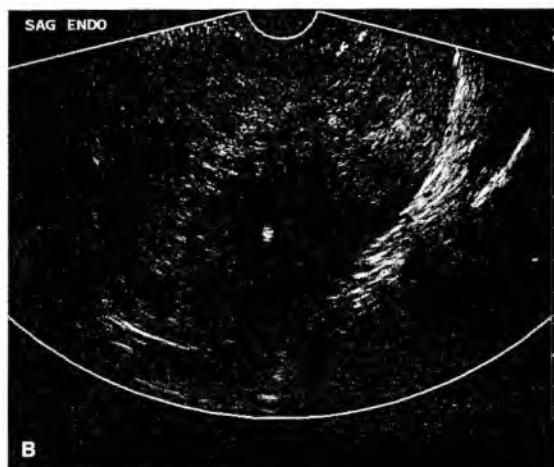


## CHAPTER 30

# The Puerperium

- 30-1.** By definition, the puerperium lasts what time interval postpartum?
- 2 weeks
  - 4 weeks
  - 6 weeks
  - 12 weeks
- 30-2.** Typically, one finger can easily be inserted through the internal cervical os for up to what time interval postpartum?
- 3 days
  - 10 days
  - 4 weeks
  - 6 weeks
- 30-3.** Of these maternal concerns, which is most commonly expressed by women in the first 2 to 9 months postpartum?
- Altered libido
  - Altered body image
  - Breastfeeding issues
  - Ability to return to work
- 30-4.** Which of the following terms is used to describe the process in which the uterus contracts and atrophies to its nonpregnant size?
- Involution
  - Reparation
  - Contracture
  - Decompression
- 30-5.** What interval following delivery is required for the typical uterus to return to its prepregnant size?
- 2 months
  - 4 months
  - 6 months
  - 8 months
- 30-6.** In an otherwise asymptomatic patient, strong uterine contractions that typically accompany nursing during the first few postpartum days should prompt which of the following management plans?
- Analgesia prn
  - Transvaginal sonography
  - Serum  $\beta$ -human chorionic gonadotropin ( $\beta$ -hCG) testing
  - Initiation of prophylactic broad-spectrum antibiotics
- 30-7.** Lochia, in its various forms, may normally persist for what time interval postpartum?
- 2 weeks
  - 4 weeks
  - 6 weeks
  - 8 weeks
- 30-8.** Subinvolutional bleeding is typically NOT treated with which of the following agents?
- Ergonovine
  - Tetracycline
  - Oral estrogen
  - Methylergonovine

**30-9.** Your patient is now 8 days postpartum following an uncomplicated pregnancy and vaginal delivery. She notes heavy vaginal bleeding and passage of clots. She is febrile and her hematocrit is unchanged from that measured following delivery. Physical findings reveal a 14-week-size boggy uterus and clots in the vaginal vault. Sonography shows the following, and calipers are measuring the endometrial cavity. The most appropriate management for this patient includes which of the following?



- a. IV pitocin
- b. IV antibiotics
- c. Oral methergine
- d. Suction dilatation and curettage (D&C) and IV antibiotics

**30-10.** You counsel your puerperal patient that most women return to their prepregnancy weight by what time interval following delivery?

- a. 2 months
- b. 6 months
- c. 12 months
- d. 24 months

**30-11.** Compared with colostrum, mature milk typically has greater amounts of which of the following per volume weight?

- a. Fat
- b. Protein
- c. Minerals
- d. All of the above

**30-12.** Which of the following vitamins is absent from mature breast milk?

- a. C
- b. D
- c. K
- d. B<sub>12</sub>

**30-13.** Some may withhold initiation of progestin-containing contraception in the immediate puerperium because progesterone withdrawal is integral to initiation of which process?

- a. Uterine involution
- b. Breast milk production
- c. Endometrial regeneration
- d. Improved glycemic control

**30-14.** Benefits of breastfeeding include lower rates of which of the following?

- a. Maternal breast cancer
- b. Infant respiratory infections
- c. Maternal postpartum weight retention
- d. All of the above

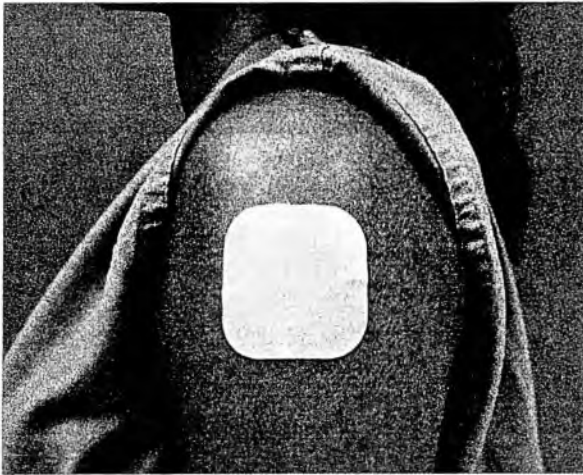
**30-15.** Correct statements regarding contraception in breastfeeding women include which of the following?

- a. Depot medroxyprogesterone lowers the quality of breast milk.
- b. Progestin-only birth control pills do not affect the quantity of breast milk.
- c. Estrogen-progestin birth control pills do affect the quality of breast milk.
- d. Estrogen-progestin birth control pills do not affect the quantity of breast milk.

**30-16.** In a woman who chooses not to breastfeed, treatment of bilateral breast engorgement with fever in the first few postpartum days is managed best with which of the following?

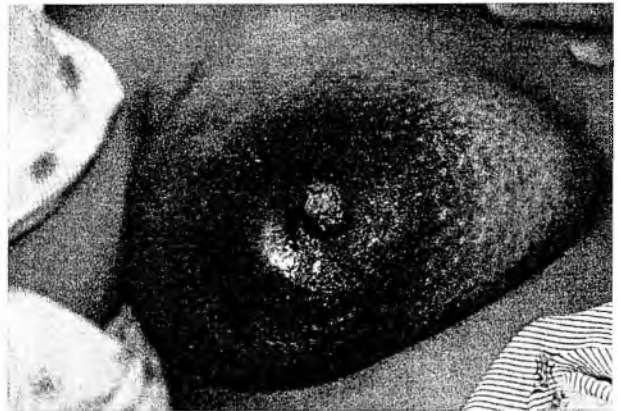
- a. Breast pumping
- b. Antibiotics with gram-positive coverage
- c. Antipyretic analgesia and breast binding
- d. All of the above

- 30-17.** Contraindications to breastfeeding include which of the following maternal infections?
- Human immunodeficiency virus (HIV)
  - Hepatitis C
  - Genital herpes simplex virus (HSV)
  - All of the above
- 30-18.** According to the American College of Obstetricians and Gynecologists, this form of birth control should not be initiated sooner than how many weeks postpartum?



- 2 weeks
  - 4 weeks
  - 6 weeks
  - 8 weeks
- 30-19.** To minimize neonatal drug exposure from maternal medications, which drug qualities are preferred during drug selection?
- Long half-life
  - Poor lipid solubility
  - Superior oral absorption
  - All of the above
- 30-20.** A typical clinical finding with mastitis includes which of the following?
- Severe breast pain
  - Breast skin ulceration
  - Bilateral breast involvement
  - Progression to abscess formation

- 30-21.** Treatment of mastitis should primarily include coverage of which of the following bacteria?
- Escherichia coli*
  - Staphylococcus aureus*
  - Streptococcus pyogenes*
  - Pseudomonas aeruginosa*
- 30-22.** Management of mastitis typically includes which of the following?
- Breast binding
  - Cessation of breastfeeding
  - Cessation of breast pumping
  - Antimicrobial therapy for 10–14 days
- 30-23.** Your patient presents 3 weeks postpartum with fever and unilateral severe breast pain associated with a fluctuant breast mass. Management of this patient should primarily include which of the following?



Contributed by Dr. William Griffith.

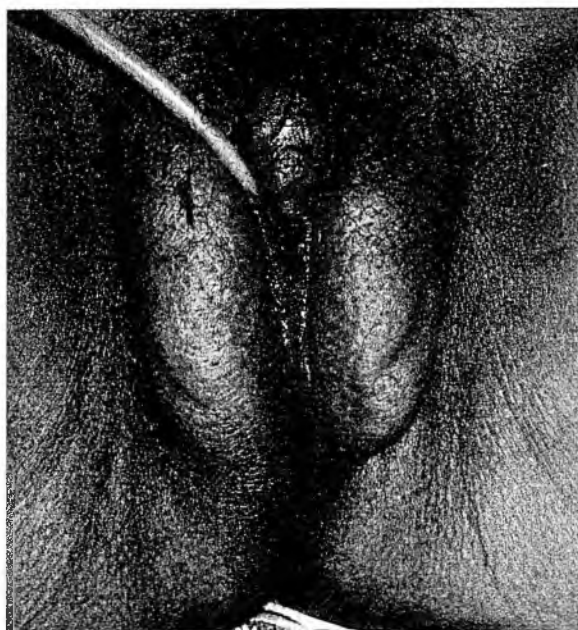
- Lumpectomy
  - Needle aspiration
  - Antibiotic therapy
  - Incision and drainage (I&D) and antibiotic therapy
- 30-24.** Your patient who is breastfeeding presents 3 weeks postpartum with complaints of breast pain. A tender, fluctuant nonerythematous mass is present and she is afebrile. Management of this patient should primarily include which of the following?
- Lumpectomy
  - Needle aspiration
  - Antibiotic therapy
  - I&D and antibiotic therapy

- 30-25. Your patient presents 5 days postpartum with an axillary mass. She noted it during pregnancy, although it was much smaller. It became significantly larger and tender yesterday. She denies fever or other complaints. Management of this patient should primarily include which of the following?



Contributed by Dr. William Griffith.

- a. Needle aspiration
  - b. Antibiotic therapy
  - c. Observation and reassurance
  - d. Axillary lymph node dissection
- 30-26. Your patient had a 2-hour second-stage labor and vaginal delivery without laceration. As her epidural analgesia subsides, she complains of perineal pain. Management of this patient should primarily include which of the following?



Contributed by Dr. Louise King.

- a. Perineal ice pack
- b. Needle aspiration
- c. Surgical evacuation
- d. I&D and antibiotic therapy

- 30-27. Which of the following is **NOT** associated with postpartum urinary retention?

- a. Long labor
- b. Chorioamnionitis
- c. Oxytocin induction
- d. Perineal laceration

- 30-28. A depressed mood within the first week postpartum occurring in a patient with no prior psychiatric history should prompt which of the following management plans?

- a. Observation
- b. Psychiatric admission
- c. Psychiatric consultation
- d. Initiation of antidepressant medications

- 30-29. Following spontaneous vaginal delivery, your patient complains of right leg weakness. Examination reveals an inability to flex the right hip and extend the leg. A common risk factor for this complication includes which of the following?

- a. Eclampsia
- b. Epidural anesthesia
- c. Prolonged second-stage labor
- d. Fourth-degree perineal laceration

- 30-30. For women who are not breastfeeding, menses will typically return during which time frame postpartum?

- a. 2-4 weeks
- b. 6-8 weeks
- c. 12-16 weeks
- d. 16-20 weeks

- 30-31. A postpartum visit is generally scheduled during which time frame postpartum?

- a. 2-4 weeks
- b. 4-6 weeks
- c. 6-8 weeks
- d. 10-12 weeks

## Chapter 30 Answer Key

| Question number | Letter answer | Page cited | Header cited                           |
|-----------------|---------------|------------|----------------------------------------|
| 30-1            | c             | p. 646     | Introduction                           |
| 30-2            | a             | p. 646     | Cervix and Lower Uterine Segment       |
| 30-3            | c             | p. 647     | Table 30-1                             |
| 30-4            | a             | p. 647     | Uterine Involution                     |
| 30-5            | b             | p. 647     | Uterine Involution                     |
| 30-6            | a             | p. 647     | After pains                            |
| 30-7            | d             | p. 648     | Lochia                                 |
| 30-8            | c             | p. 648     | Subinvolution                          |
| 30-9            | d             | p. 648     | Management                             |
| 30-10           | b             | p. 649     | Weight Loss                            |
| 30-11           | a             | p. 649     | Colostrum                              |
| 30-12           | c             | p. 649     | Milk                                   |
| 30-13           | b             | p. 650     | Endocrinology of Lactation             |
| 30-14           | d             | p. 651     | Nursing                                |
| 30-15           | b             | p. 652     | Contraception for Breast-Feeding Women |
| 30-16           | c             | p. 652     | Breast Engorgement                     |

| Question number | Letter answer | Page cited | Header cited                        |
|-----------------|---------------|------------|-------------------------------------|
| 30-17           | a             | p. 652     | Contraindications to Breast Feeding |
| 30-18           | c             | p. 652     | Table 30-4                          |
| 30-19           | b             | p. 653     | Drugs Secreted in Milk              |
| 30-20           | a             | p. 653     | Mastitis                            |
| 30-21           | b             | p. 653     | Mastitis                            |
| 30-22           | d             | p. 654     | Treatment                           |
| 30-23           | d             | p. 654     | Breast Abscess                      |
| 30-24           | b             | p. 654     | Galactocele                         |
| 30-25           | c             | p. 654     | Accessory breast tissue             |
| 30-26           | a             | p. 655     | Perineal Care                       |
| 30-27           | b             | p. 655     | Bladder Function                    |
| 30-28           | a             | p. 655     | Depression                          |
| 30-29           | c             | p. 656     | Obstetrical Neuropathies            |
| 30-30           | b             | p. 657     | Contraception                       |
| 30-31           | b             | p. 658     | Postpartum Follow-up Care           |



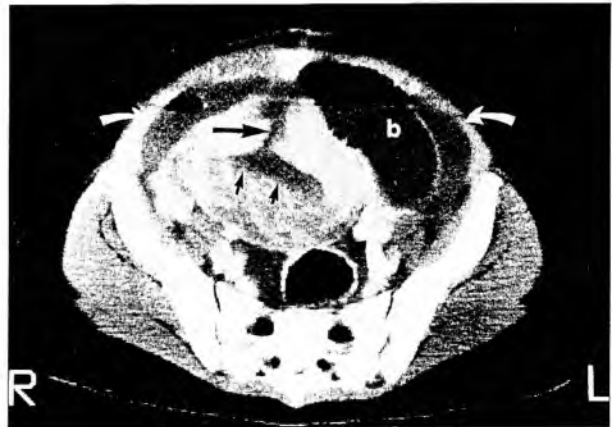
## CHAPTER 31

# Puerperal Infection

- 31-1.** Most persistent fevers after childbirth are caused by which of the following?
- Breast engorgement
  - Pyelonephritis
  - Atelectasis
  - Genital tract infection
- 31-2.** Which of the following is the single most significant risk factor for the development of uterine infection?
- Internal monitors
  - Route of delivery
  - Prenatal asymptomatic bacteriuria
  - Length of rupture of membranes
- 31-3.** What practice has done the most to decrease the incidence and severity of postcesarean delivery infections in the past 30 years?
- Decreasing surgery time
  - Irrigating the abdomen before closing fascia
  - Regional anesthesia
  - Single-dose antimicrobial prophylaxis
- 31-4.** Which of the following does **NOT** increase the risk of postpartum metritis?
- Singleton delivery
  - Manual removal of the placenta
  - Low socioeconomic status
  - Multiple intrapartum cervical examinations
- 31-5.** In late-onset, indolent metritis, which of the following bacterial species has been implicated?
- Pseudomonas*
  - Staphylococcus*
  - Chlamydia*
  - Clostridium*
- 31-6.** A 19-year-old primipara is 36 hours postpartum following cesarean delivery for failure to progress. She is complaining of abdominal pain and has a fever of 38°C. She is not yet tolerating oral intake because of nausea. You diagnose metritis. Management should include all **EXCEPT** which of the following?
- Obtain blood cultures
  - Administer intravenous fluids
  - Provide antipyretics
  - Order intravenous broad-spectrum antibiotics
- 31-7.** Which of the following is the most important criterion for the diagnosis of postpartum metritis?
- Uterine tenderness
  - Fever
  - Foul-smelling lochia
  - Leukocytosis
- 31-8.** Which of the following statements about the treatment of metritis is **INCORRECT**?
- For moderate-to-severe infection, intravenous therapy with a broad-spectrum antimicrobial regimen is indicated.
  - 90% of patients improve in 48–72 hours if treated.
  - It is safe to discharge the patient home when afebrile for 24 hours.
  - Following hospital antibiotic therapy, patients should be sent home with a 10-day course of broad-spectrum oral antibiotics.
- 31-9.** A pelvic infection after a cesarean delivery is treated with gentamicin and clindamycin. In cases where enterococcal infection is suspected, which of the following antibiotics should be added?
- Metronidazole
  - Ampicillin
  - Imipenem
  - Erythromycin

- 31-10.** Which of the following has been shown to prevent postpartum pelvic infections?
- Allowing the placenta to separate spontaneously
  - Changing gloves during cesarean delivery after delivery of the placenta
  - Prenatal treatment of asymptomatic vaginal infections
  - Surgical closure of the peritoneum
- 31-11.** On which postoperative day does wound infection generally occur?
- Day 1
  - Day 3
  - Day 4–7
  - Day 10
- 31-12.** A 25-year-old G2P2 presents to the emergency department 6 days after a cesarean delivery for failure to progress. Her labor course was complicated by chorioamnionitis, which was treated with intravenous broad-spectrum antibiotics. She notes a purulent, foul-smelling drainage from her incision. She has not taken her temperature at home, but does recall having shaking chills for the past 2 days. Currently, her temperature is 38°C. The area around the incision is erythematous, indurated, and tender. Purulent drainage is oozing from the lateral aspect, and the incision is open approximately 4 cm. During bimanual examination, there is normal lochia and no cervical motion tenderness. What is the next management step of this patient?
- Obtain a wound culture
  - Open the wound to determine the integrity of the fascia
  - Start intravenous broad-spectrum antibiotics
  - Close the wound with polypropylene suture of appropriate gauge
- 31-13.** Which of the following describes induration within the leaves of the broad ligament?
- Pelvic abscess
  - Parametrial collection
  - Phlegmon
  - Bleb
- 31-14.** In most women given broad-spectrum antibiotics for a parametrial phlegmon, fever resolution is expected within how many days?
- 1–2 days
  - 3–4 days
  - 5–7 days
  - 10–14 days

- 31-15.** A 30-year-old G4P3 presents to the emergency department 5 days following cesarean delivery. She complains of malodorous, purulent drainage from her skin incision and her vagina. The patient has a temperature of 39°C, and pus is draining from the wound. In addition, the patient has uterine tenderness and foul-smelling lochia. A computed tomography (CT) scan is performed, and an image from that study is provided here. The black arrow indicates which of the following?



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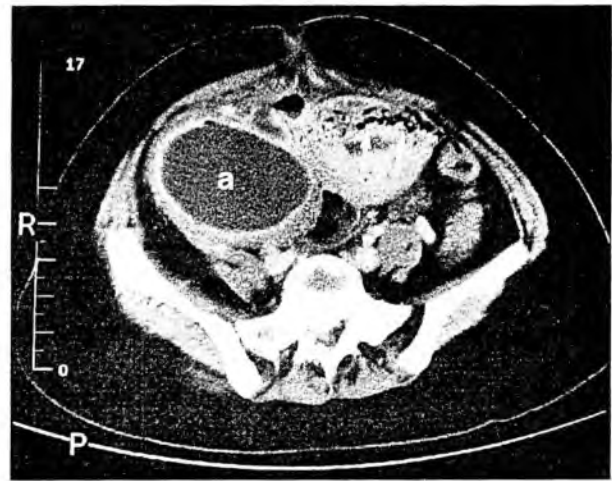
- The uterine incision is healing properly.
  - There is a dehiscence of the uterine incision.
  - There is a fistula between the uterus and bladder.
  - There are varicosities of the anterior uterine wall.
- 31-16.** What is the best management for the patient described in Question 31-15?
- Conservative management with intravenous antibiotics only
  - Intravenous antibiotics and surgical exploration with debridement or possible hysterectomy
  - Intravenous antibiotics and CT-guided drainage of any collections
  - Intravenous antibiotics with dilatation and curettage

- 31-17.** You elect to take the patient from Question 31-15 to the operating room after administering intravenous antibiotics. An image demonstrating the state of the uterus is given here. Purulent material is coming from the uterine incision, filling the abdomen. What is the best management plan at this point?



- a. Abdominal irrigation and closure of the patient's fascia and skin
- b. Reapproximation of the uterine incision with polyglactin suture, abdominal irrigation, and closure of the patient's fascia leaving the skin open
- c. Hysterectomy, abdominal irrigation, and closure of the patient's fascia leaving the skin open
- d. Debridement and closure of the uterine incision, abdominal irrigation, and closure of the patient's fascia and skin

- 31-18.** This pelvic CT scan is from a patient who presents with fever and a small amount of drainage from her skin incision 6 days after cesarean delivery. The area marked by the arrows represents which of the following?



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- a. Gas in the myometrium
  - b. Normal postoperative changes
  - c. Hemorrhage into the myometrium
  - d. Phlegmon
- 31-19.** A 20-year-old primipara was diagnosed with metritis on postpartum day 2 following a vaginal delivery. Her fever persists despite 5 days of appropriate antibiotic therapy. What is the next best management step?
- a. Halt antibiotics
  - b. Heparin challenge test
  - c. Doppler studies of her legs
  - d. Pelvic CT scan or magnetic resonance (MR) imaging

- 31-20.** A CT scan from the patient in Question 31-19 is provided here. The arrows represent which of the following?



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- a. Enlargement of the right ovarian venous plexus because of thrombosis
  - b. Abscess formation in the right parametrium
  - c. Normal postpartum findings
  - d. Right tubo-ovarian abscess
- 31-21.** Treatment of the condition diagnosed in Question 31-20 includes which of the following?
- a. Heparin and discontinuation of antibiotics
  - b. CT-guided drainage
  - c. Continued intravenous antibiotics only
  - d. Heparin and continued intravenous antibiotics
- 31-22.** All EXCEPT which of the following are associated with episiotomy dehiscence?
- a. Smoking
  - b. Human papilloma virus (HPV) infection
  - c. Coagulopathy
  - d. Asthma
- 31-23.** What is the most important factor in determining whether early repair of an episiotomy dehiscence is appropriate?
- a. Wound size
  - b. Wound free of infection and devitalized tissue
  - c. Maternal hematocrit
  - d. Maternal smoking status

- 31-24.** An 18-year-old primipara presents to the emergency department 5 days after a vaginal delivery complaining of pain and drainage from her episiotomy site. The area appears infected. You begin broad-spectrum intravenous antibiotics and take the patient to the operating room for exploration and debridement. An image of the wound after debridement is given here. The laceration is of what degree?



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- a. First degree
  - b. Second degree
  - c. Third degree
  - d. Fourth degree
- 31-25.** For the patient in Question 31-24, in addition to antibiotics, after the wound has been completely opened and debrided, what other management point is important?
- a. Provide a low-residue diet
  - b. Prescribe stool softeners
  - c. Avoid placing anything in the rectum or vagina
  - d. All of the above

**Chapter 31 Answer Key**

| Question number | Letter answer | Page cited | Header cited                       |
|-----------------|---------------|------------|------------------------------------|
| <b>31-1</b>     | <b>d</b>      | p. 661     | Puerperal Fever                    |
| <b>31-2</b>     | <b>b</b>      | p. 661     | Uterine Infection                  |
| <b>31-3</b>     | <b>d</b>      | p. 662     | Uterine Infection                  |
| <b>31-4</b>     | <b>a</b>      | p. 662     | Uterine Infection                  |
| <b>31-5</b>     | <b>c</b>      | p. 663     | Uterine Infection                  |
| <b>31-6</b>     | <b>a</b>      | p. 663     | Uterine Infection                  |
| <b>31-7</b>     | <b>b</b>      | p. 663     | Clinical Course                    |
| <b>31-8</b>     | <b>d</b>      | p. 663     | Clinical Course/Treatment          |
| <b>31-9</b>     | <b>b</b>      | p. 664     | Table 31-2                         |
| <b>31-10</b>    | <b>a</b>      | p. 665     | Prevention of Infection            |
| <b>31-11</b>    | <b>c</b>      | p. 665     | Complications of Pelvic Infections |
| <b>31-12</b>    | <b>a</b>      | p. 665     | Complications of Pelvic Infections |
| <b>31-13</b>    | <b>c</b>      | p. 666     | Complications of Pelvic Infections |
| <b>31-14</b>    | <b>c</b>      | p. 666     | Complications of Pelvic Infections |
| <b>31-15</b>    | <b>b</b>      | p. 667     | Figure 31-3                        |

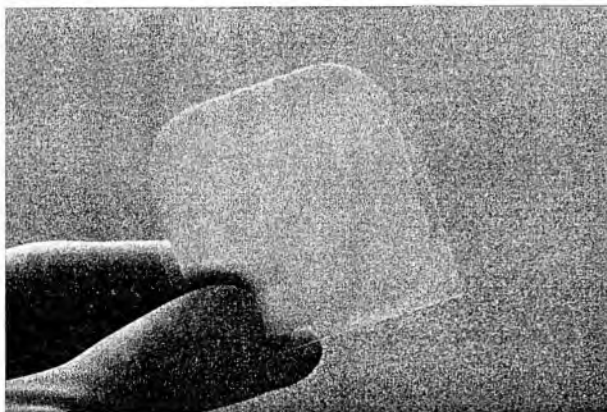
| Question number | Letter answer | Page cited | Header cited                                   |
|-----------------|---------------|------------|------------------------------------------------|
| <b>31-16</b>    | <b>b</b>      | p. 666     | Complications of Pelvic Infections             |
| <b>31-17</b>    | <b>c</b>      | p. 666     | Complications of Pelvic Infections             |
| <b>31-18</b>    | <b>a</b>      | p. 667     | Figure 31-4                                    |
| <b>31-19</b>    | <b>d</b>      | p. 667     | Septic Pelvic Thrombophlebitis                 |
| <b>31-20</b>    | <b>a</b>      | p. 668     | Figure 31-6                                    |
| <b>31-21</b>    | <b>c</b>      | p. 667     | Septic Pelvic Thrombophlebitis                 |
| <b>31-22</b>    | <b>d</b>      | p. 668     | Infections of the Perineum, Vagina, and Cervix |
| <b>31-23</b>    | <b>b</b>      | p. 669     | Infections of the Perineum, Vagina, and Cervix |
| <b>31-24</b>    | <b>d</b>      | p. 669     | Figure 31-7                                    |
| <b>31-25</b>    | <b>d</b>      | p. 669     | Infections of the Perineum, Vagina, and Cervix |

**CHAPTER 32****Contraception**

- 32-1.** With typical use, which of the following contraceptive methods has the highest failure rate within the first year of use?
- Intrauterine device
  - Spermicides
  - Male condom
  - Progestin-only pills
- 32-2.** Which of the following is considered a primary contraceptive mechanism of combination oral contraceptive pills?
- Ovicular
  - Spermicidal
  - Ovulation inhibition
  - Altered fallopian tube peristalsis
- 32-3.** For most women, lowering the acceptable dose of ethinyl estradiol in combination oral contraceptives is mainly limited by the incidence of which of the following?
- Acne
  - Headaches
  - Dysmenorrhea
  - Intramenstrual bleeding
- 32-4.** For the "Quick Start" method of combination oral contraceptive pill initiation, which of the following is true?
- Start on the last day of menses
  - Start on the first day of menses
  - Start on the Sunday that follows the first day of menses
  - Start on any day, with 1 week of concurrent backup method use
- 32-5.** Drugs whose efficacy may be diminished by combination oral contraceptive pill use include which of the following?
- Lisinopril
  - Macroclantin
  - Acetaminophen
  - Metoclopramide
- 32-6.** Drugs that may reduce combination oral contraceptive pill efficacy include which of the following?
- Rifampin
  - Ranitidine
  - Prednisone
  - Hydrochlorothiazide
- 32-7.** A proven benefit of combination oral contraceptive pills includes which of the following?
- Increased bone density
  - Improved cognitive memory
  - Lowered total cholesterol levels
  - Decreased rates of thromboembolism
- 32-8.** The relative risk of which of the following cancers has been associated with current combination oral contraceptive pill use?
- Cervical
  - Ovarian
  - Melanoma
  - Endometrial
- 32-9.** Contraindications to combination oral contraceptive pill use include which of the following?
- Prior acute hepatitis
  - Prior cervical dysplasia
  - Prior thromboembolism
  - Prior simple endometrial hyperplasia
- 32-10.** Which of the following describes the risk of myocardial infarction in women using low-dose combination oral contraceptive pills?
- Not increased in nonsmokers
  - Not increased in any group of women
  - Increased in both smokers and nonsmokers
  - None of the above

- 32-11. If prescribing combination oral contraceptive pills to a woman with hypertension, which clinical criterion should be met?
- Nonsmoker
  - Younger than 35 years
  - Hypertension well controlled
  - All of the above

- 32-12. This method of contraception may be worn on all EXCEPT which of the following locations?



- Thigh
  - Breast
  - Buttock
  - Upper arm
- 32-13. With transdermal contraceptive patch use, the patch should be replaced how frequently?
- Daily
  - Every other day
  - Weekly
  - Every 3 weeks
- 32-14. With transdermal contraceptive patch use, contraceptive failure may occur in which of the following situations?
- Patient weight >90 kg
  - Concurrent antibiotic use
  - Patch worn while in hot tub or sauna
  - All of the above

- 32-15. This method of contraception should be replaced how frequently?



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- Daily
  - Weekly
  - Every 3 weeks
  - Every 3 months
- 32-16. Compared with combination oral contraceptive pills, NuvaRing is associated with higher rates of which of the following?
- Contraceptive failure
  - Toxic shock syndrome
  - Cervical intraepithelial neoplasia
  - None of the above
- 32-17. Side effects of depot medroxyprogesterone acetate (DMPA) commonly may include which of the following?
- Amenorrhea
  - Irregular uterine bleeding
  - Delayed return of fertility following DMPA cessation
  - All of the above
- 32-18. DMPA is administered in which of the following dosage and by what route?
- 100 mg subcutaneously, each month
  - 150 mg intramuscularly, every 12 weeks
  - 150 mg subdermal implant, every 3 years
  - All of the above

**32-19.** Risks and benefits of DMPA use for more than 2 years should be evaluated carefully, especially in which of the following patients?

- a. Hypertensive women
- b. Perimenopausal women
- c. Women with a family history of breast cancer
- d. Women with a history of simple endometrial hyperplasia

**32-20.** With this method, which of the following is true regarding insertion site and maximum duration of contraceptive effectiveness?



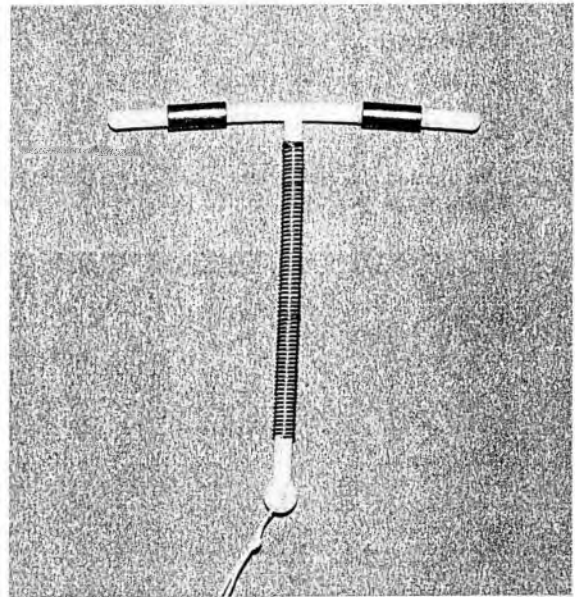
Reproduced, with permission, of NV Organon, a subsidiary of Merck & Co., Inc. All rights reserved. Nuvaring is a registered trademark of NV Organon.

- a. Vaginally, use for 3 weeks
- b. Subdermally, use for 3 years
- c. Subcutaneously, use for 5 years
- d. Intramuscularly, use for 5 years

**32-21.** To locate a nonpalpable IMPLANON implant, which of the following modalities is preferred?

- a. Sonography
- b. Fluoroscopy
- c. Radiography
- d. CT scanning

**32-22.** Contraceptive efficacy with this method is believed to result from which of the following?



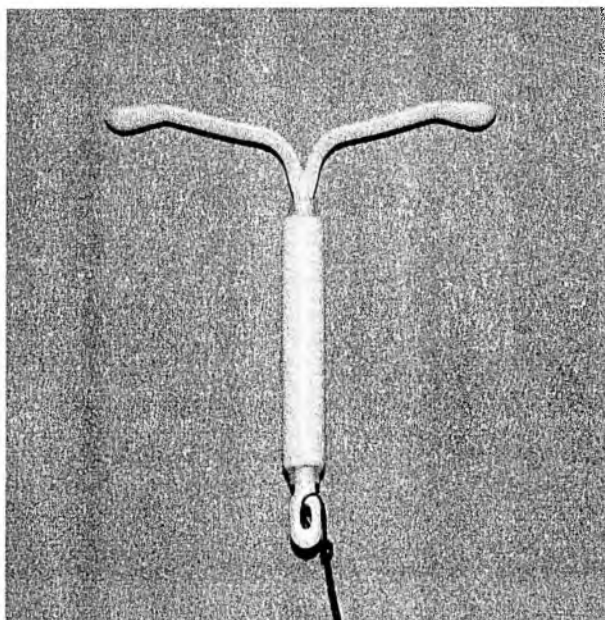
- a. Spermicidal action
- b. Ovulation inhibition
- c. Cervical mucus thickening
- d. All of the above

**32-23.** With a copper intrauterine device (IUD), side effects may often include which of the following?

- a. Acne
- b. Weight gain
- c. Uterine bleeding
- d. Functional ovarian cysts



- 32-24. Compared with the copper IUD, this IUD offers which of the following advantages?



- a. Lower rates of menorrhagia
- b. Longer duration of effective use
- c. Lower rates of ovarian cyst formation
- d. None of the above

- 32-25. If IUD strings are not seen during examination, the most appropriate initial management includes which of the following?

- a. Observation
- b. Kidney-ureter-bladder (KUB) radiography
- c.  $\beta$ -Human chorionic gonadotrophin ( $\beta$ -hCG) evaluation
- d. IUD retrieval with an IUD hook or forceps

- 32-26. Appropriate management of actinomyces found during PAP smear screening in an asymptomatic patient includes all **EXCEPT** which of the following?

- a. Observation
- b. IUD removal
- c. Oral penicillin and IUD left in situ
- d. IUD removal with immediate reinsertion of a new device

- 32-27. Antenatally, this pregnancy was at increased risk for which of the following?

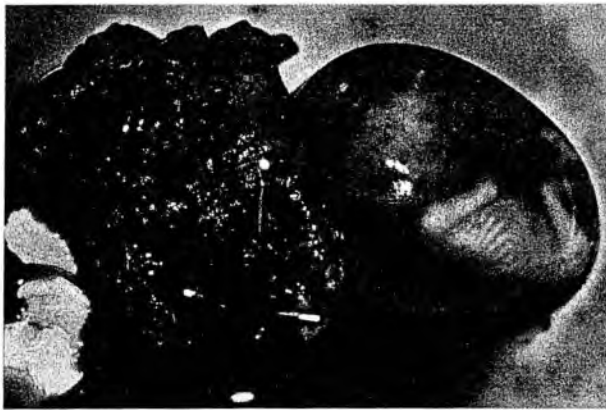


- a. Fetal-growth restriction
- b. Fetal malformations
- c. Intrauterine infection
- d. All of the above

- 32-28. What is the most appropriate management for an asymptomatic woman with 8 weeks of amenorrhea, a positive pregnancy test result, and strings of a copper IUD visible at the cervix?

- a. Observation
- b. IUD removal and dilatation and curettage (D&C)
- c. Penicillin and IUD removal
- d. IUD removal and transvaginal sonography

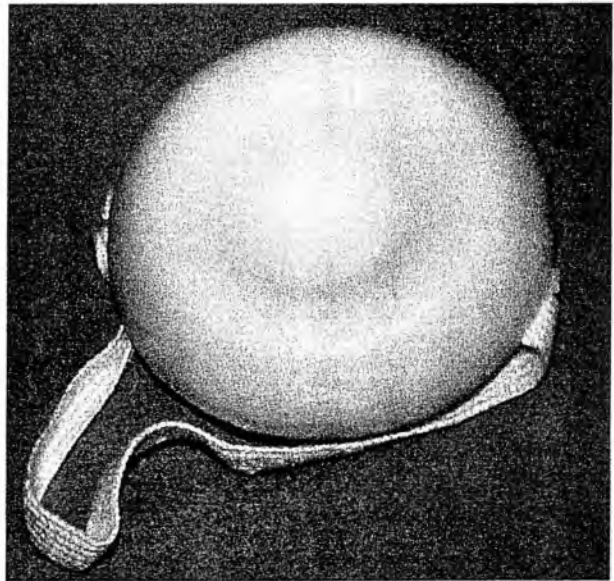
**32-29.** If an IUD is left in situ during pregnancy, what is the risk of this pregnancy complication?



Contributed by Dr. Clarice Grimes.

- a. 10%
  - b. 25%
  - c. 50%
  - d. 75%
- 32-30.** What is the approximate abortion rate if an IUD in situ is removed promptly early in pregnancy?
- a. 10%
  - b. 25%
  - c. 50%
  - d. 75%
- 32-31.** Contraindications to IUD use include which of the following?
- a. Smoker
  - b. Adolescent
  - c. Multiple sexual partners
  - d. All of the above
- 32-32.** Which of the following may improve the contraceptive effectiveness of latex male condoms?
- a. Reservoir tip
  - b. Oil-based lubricant
  - c. Withdrawal after penile tumescence
  - d. All of the above
- 32-33.** Advantages of nonoxynol-9-containing spermicide use include which of the following?
- a. Nonteratogenic
  - b. 4-hour maximum duration of efficacy
  - c. Protects against sexually transmitted diseases
  - d. All of the above

**32-34.** Compared with latex diaphragms, this product offers which advantages?



- a. Higher efficacy
  - b. Does not require prescription
  - c. Not associated with subsequent vaginitis
  - d. Not associated with toxic shock syndrome
- 32-35.** Which of the following is **NOT** a variation of periodic abstinence as a family planning method?
- a. Withdrawal
  - b. Symptothermal
  - c. Calendar rhythm
  - d. Cervical mucus rhythm method
- 32-36.** Current methods of emergency contraception include all **EXCEPT** which of the following?
- a. Mifepristone
  - b. Levonorgestrel-releasing IUD
  - c. Levonorgestrel-containing pills
  - d. Combination oral contraceptive pills

**Chapter 32 Answer Key**

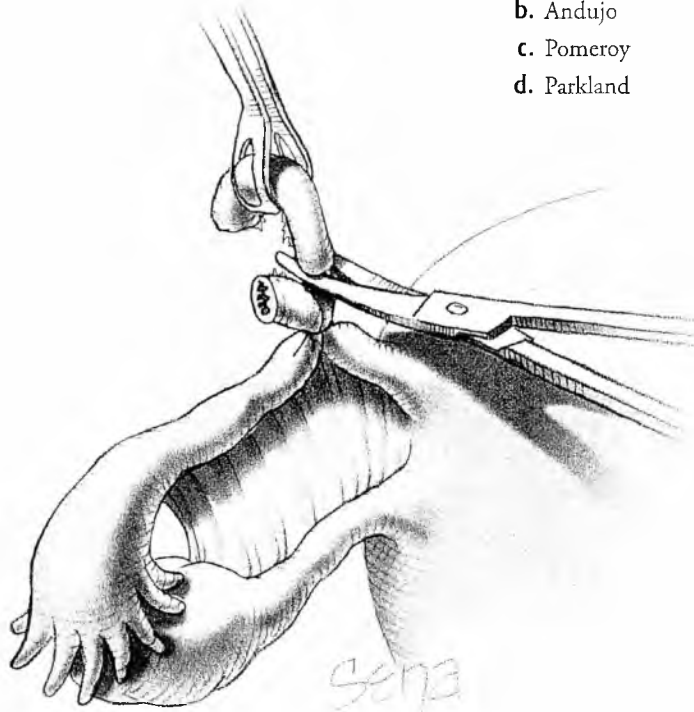
| Question number | Letter answer | Page cited | Header cited                        |
|-----------------|---------------|------------|-------------------------------------|
| 32-1            | b             | p. 675     | Table 32-2                          |
| 32-2            | c             | p. 673     | Mechanisms of Action                |
| 32-3            | d             | p. 674     | Dosage                              |
| 32-4            | d             | p. 674     | Pill Usage                          |
| 32-5            | c             | p. 678     | Table 32-4                          |
| 32-6            | a             | p. 678     | Table 32-5                          |
| 32-7            | a             | p. 679     | Table 32-6                          |
| 32-8            | a             | p. 679     | Neoplasia                           |
| 32-9            | c             | p. 680     | Table 32-7                          |
| 32-10           | a             | p. 680     | Cardiovascular Effects              |
| 32-11           | d             | p. 680     | Cardiovascular Effects              |
| 32-12           | b             | p. 681     | Transdermal Administration          |
| 32-13           | c             | p. 681     | Transdermal Administration          |
| 32-14           | a             | p. 681     | Transdermal Administration          |
| 32-15           | c             | p. 681     | Transvaginal Administration         |
| 32-16           | d             | p. 681     | Transvaginal Administration         |
| 32-17           | d             | p. 682     | Injectable Progestin Contraceptives |
| 32-18           | b             | p. 682     | Injectable Progestin Contraceptives |

| Question number | Letter answer | Page cited | Header cited              |
|-----------------|---------------|------------|---------------------------|
| 32-19           | b             | p. 683     | Disadvantages             |
| 32-20           | b             | p. 683     | Etonogestrel Implants     |
| 32-21           | a             | p. 683     | Etonogestrel Implants     |
| 32-22           | a             | p. 684     | Contraceptive Action      |
| 32-23           | c             | p. 685     | Adverse Effects           |
| 32-24           | a             | p. 685     | Adverse Effects           |
| 32-25           | c             | p. 685     | Lost Device               |
| 32-26           | d             | p. 686     | Actinomyces Infection     |
| 32-27           | c             | p. 686     | Pregnancy with an IUD     |
| 32-28           | d             | p. 686     | Pregnancy with an IUD     |
| 32-29           | c             | p. 686     | Pregnancy with an IUD     |
| 32-30           | b             | p. 686     | Pregnancy with an IUD     |
| 32-31           | c             | p. 686     | Table 32-8                |
| 32-32           | a             | p. 687     | Male Condom               |
| 32-33           | a             | p. 688     | Spermicides               |
| 32-34           | b             | p. 691     | Contraceptive Sponge      |
| 32-35           | a             | p. 692     | Fertility-Based Awareness |
| 32-36           | b             | p. 692     | Emergency Contraception   |

## CHAPTER 33

# Sterilization

- 33-1.** Regarding female tubal sterilization, correct patient counseling points include which of the following?
- Easy procedure reversibility
  - Highly effective method of contraception
  - Low surgical risks compared with vasectomy
  - All of the above
- 33-2.** The failure rate for the Parkland method of tubal sterilization approximates which of the following?
- 1:400
  - 1:600
  - 1:800
  - 1:1,000
- 33-3.** Which of the following aspects of normal postpartum maternal anatomy are **NOT** advantageous for puerperal sterilization?
- Noninvoluted uterus
  - Lax anterior abdominal wall
  - Engorged mesosalpinx vessels
  - All of the above
- 33-4.** Which of the following is an uncommonly used method of puerperal sterilization?
- Uchida
  - Parkland
  - Pomeroy
  - Modified Pomeroy
- 33-5.** Which of the following methods of puerperal sterilization is illustrated here?
- Uchida
  - Andujo
  - Pomeroy
  - Parkland





**33-6.** Which of the following methods of puerperal sterilization is illustrated above?

- a. Irving
- b. Uchida
- c. Pomeroy
- d. Parkland

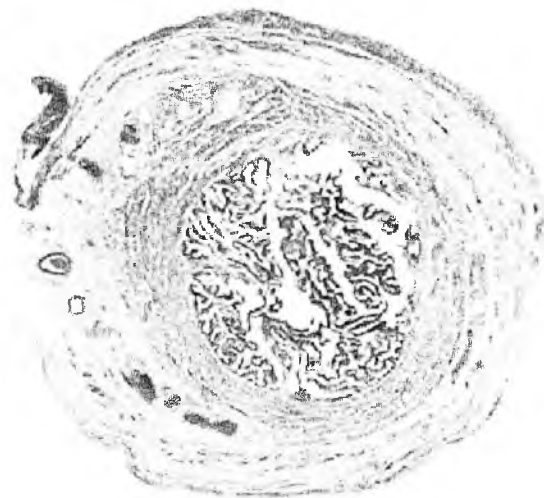
**33-7.** Prior to ligation, the fallopian tube is most reliably identified by which of its following attributes?

- a. Fimbria
- b. Round tubular structure
- c. Pronounced vascularity
- d. Insertion into the uterine cornua

**33-8.** With the Parkland method, to allow adequate separation of tubal stumps, it is recommended that a section of approximately which length be excised?

- a. 0.5 cm
- b. 1 cm
- c. 2 cm
- d. 4 cm

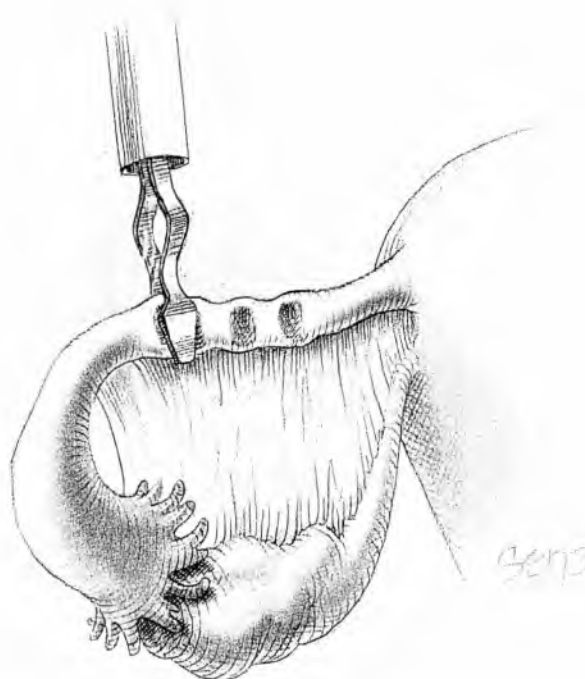
**33-9.** Fallopian tubes are sent for pathological evaluation following puerperal sterilization to document complete transection. This is a micrograph of which of the following?



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- a. Appendix
- b. Fallopian tube
- c. Round ligament
- d. Utero-ovarian ligament

- 33-10.** Puerperal sterilization failures result most commonly from which of the following?
- Ligation of incorrect structure
  - Postoperative acute salpingitis
  - Use of absorbable suture for ligation
  - Intercourse too soon following ligation
- 33-11.** In the United States, interval tubal sterilization is most commonly completed by which of the following methods?
- Colpotomy
  - Laparoscopy
  - Hysteroscopy
  - Minilaparotomy
- 33-12.** Of the following interval sterilization methods, which is least commonly employed in the United States?
- Laparoscopic clip placement
  - Distal fimbriectomy via colpotomy
  - Laparoscopic electrosurgical coagulation
  - Hysteroscopic placement of tubal occlusive inserts
- 33-13.** With this method of interval sterilization shown below, which of the following energy sources is preferred?
- Harmonic ultrasound
  - Bipolar electrocoagulation
  - Unipolar electrocoagulation
  - Nd:YAG (neodymium-doped yttrium aluminum garnet) laser
- 33-14.** Cause for interval tubal ligation failure includes which of the following?
- Fistula formation
  - Intercourse too soon after the procedure
  - Surgery scheduled in the follicular phase
  - All of the above
- 33-15.** Amenorrhea following tubal sterilization should prompt which of the following?
- Basal body temperature charting
  - Intramuscular methotrexate administration
  - $\beta$ -Human chorionic gonadotropin testing
  - Progesterone administration and withdrawal
- 33-16.** Although an effective method of contraception, pregnancy in a patient following tubal sterilization is often complicated by which of the following?
- Twinning
  - Placenta previa
  - Placenta accreta
  - Ectopic implantation
- 33-17.** Studies support that tubal ligation is associated with which of the following postprocedural side effects?
- Regret
  - Menorrhagia
  - Breast cancer
  - Decreased libido



- 33-18.** This device achieves sterilization by which of the following methods?



- a. It lies within the cervical canal to secrete spermicide.
  - b. It wraps around the fallopian tube to occlude the lumen.
  - c. It is placed within the tubal ostia to promote occlusive tissue ingrowth.
  - d. It is placed within the endometrial canal to agglutinate the endometrium.
- 33-19.** With the Essure method, which of the following imaging procedures is recommended to document sterilization following surgery?
- a. KUB radiograph
  - b. Hysterosalpingography
  - c. Magnetic resonance imaging
  - d. 3-D transvaginal sonography
- 33-20.** With the Essure method, an imaging procedure to document sterilization should be performed how long after surgery?
- a. 1 week
  - b. 4 weeks
  - c. 8 weeks
  - d. 12 weeks
- 33-21.** During vasectomy, which of the following structures is ligated?
- a. Epididymis
  - b. Spermatic cord
  - c. Ductus deferens
  - d. Efferent ductule
- 33-22.** Compared with vasectomy, which of the following is higher with female tubal sterilization?
- a. Cost
  - b. Failure rate
  - c. Surgical complication rate
  - d. All of the above
- 33-23.** To avoid conception following vasectomy, an alternative form of contraception should be used until semen analysis documents aspermia. Complete sperm expulsion from the reproductive tract takes approximately how long?
- a. 1 week
  - b. 4 weeks
  - c. 8 weeks
  - d. 12 weeks
- 33-24.** Vasectomy failures may result from which of the following?
- a. Recanalization
  - b. Incomplete surgical occlusion
  - c. Intercourse too soon after the procedure
  - d. All of the above
- 33-25.** A long-term complication following vasectomy includes which of the following?
- a. Regret
  - b. Atherogenesis
  - c. Testicular cancer
  - d. All of the above

**Chapter 33 Answer Key**

| Question number | Letter answer | Page cited | Header cited                               |
|-----------------|---------------|------------|--------------------------------------------|
| <b>33-1</b>     | <b>b</b>      | p. 699     | Failure Rates                              |
| <b>33-2</b>     | <b>a</b>      | p. 699     | Failure Rates                              |
| <b>33-3</b>     | <b>c</b>      | p. 698     | Puerperal Tubal Sterilization              |
| <b>33-4</b>     | <b>a</b>      | p. 698     | Puerperal Tubal Sterilization              |
| <b>33-5</b>     | <b>c</b>      | p. 700     | Figure 33-2                                |
| <b>33-6</b>     | <b>d</b>      | p. 699     | Figure 33-1                                |
| <b>33-7</b>     | <b>a</b>      | p. 698     | Surgical Technique                         |
| <b>33-8</b>     | <b>c</b>      | p. 699     | Figure 33-1                                |
| <b>33-9</b>     | <b>b</b>      | p. 699     | Failure Rates                              |
| <b>33-10</b>    | <b>a</b>      | p. 699     | Failure Rates                              |
| <b>33-11</b>    | <b>b</b>      | p. 700     | Surgical Approaches                        |
| <b>33-12</b>    | <b>b</b>      | p. 700     | Surgical Approaches                        |
| <b>33-13</b>    | <b>b</b>      | p. 700     | Laparoscopic Methods of Tubal Interruption |

| Question number | Letter answer | Page cited | Header cited       |
|-----------------|---------------|------------|--------------------|
| <b>33-14</b>    | <b>a</b>      | p. 700     | Failure Rates      |
| <b>33-15</b>    | <b>c</b>      | p. 701     | Ectopic Pregnancy  |
| <b>33-16</b>    | <b>d</b>      | p. 701     | Ectopic Pregnancy  |
| <b>33-17</b>    | <b>a</b>      | p. 701     | Other Effects      |
| <b>33-18</b>    | <b>c</b>      | p. 702     | Intratubal Devices |
| <b>33-19</b>    | <b>b</b>      | p. 702     | Intratubal Devices |
| <b>33-20</b>    | <b>d</b>      | p. 702     | Intratubal Devices |
| <b>33-21</b>    | <b>c</b>      | p. 702     | Male Sterilization |
| <b>33-22</b>    | <b>d</b>      | p. 703     | Male Sterilization |
| <b>33-23</b>    | <b>d</b>      | p. 703     | Male Sterilization |
| <b>33-24</b>    | <b>d</b>      | p. 703     | Male Sterilization |
| <b>33-25</b>    | <b>a</b>      | p. 703     | Long-term Effects  |



SECTION 7

# OBSTETRICAL COMPLICATIONS

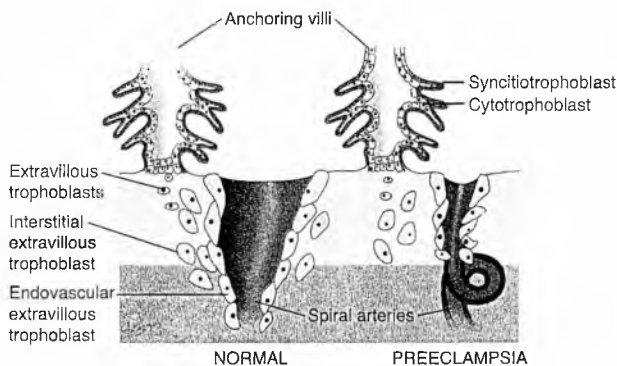


## CHAPTER 34

# Pregnancy Hypertension

- 34-1.** Which of the following is accurate regarding the diagnosis of gestational hypertension?
- It is appropriate if patients demonstrate only 1+ protein on urine dipstick.
  - It can be made only if hypertension resolves by 12 weeks postpartum.
  - It is made if the systolic blood pressure increases by 30 mm Hg over the patient's baseline blood pressure.
  - All of the above.

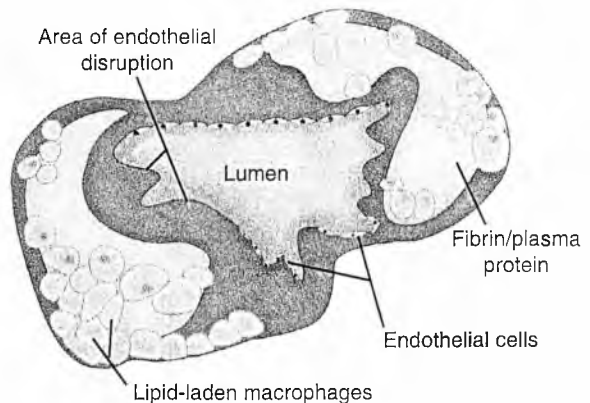
- 34-2.** The figure given here demonstrates which of the following proposed etiologies for preeclampsia?



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- Increased branching of the chorion frondosum
- Incomplete trophoblastic invasion of uterine arterioles
- Development of blocking antibodies to placental antigenic sites
- Increased activity of decidual natural killer cells leading to reduced placental vascularity

- 34-3.** What is the term for placental vasculature changes shown here, which include endothelial damage and subsequent lipid accumulation in myointimal cells?



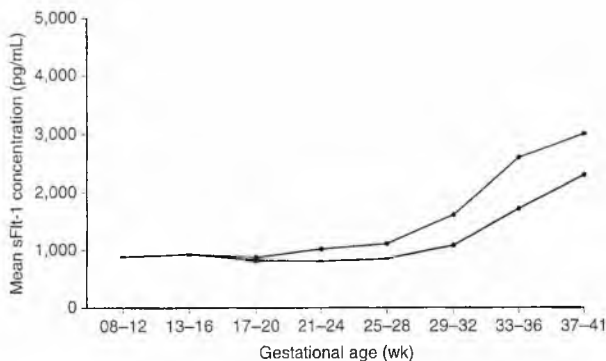
Modified, with permission, from BB Rogers, SL Bloom, and KJ Leveno: *Atherosclerosis revisited: Current concepts on the pathophysiology of implantation site*, *Obstet Gynecol Survey* 1999;54(3):189-195.

- Atherosclerosis
  - Vasospasm
  - Angiogenesis
  - Endotheliosis
- 34-4.** What is the risk that a daughter of a woman who had preeclampsia will develop this complication herself?
- 5%
  - 10%
  - 65%
  - 20-40%

- 34-5. What is the incidence of gestational hypertension in this type of pregnancy?



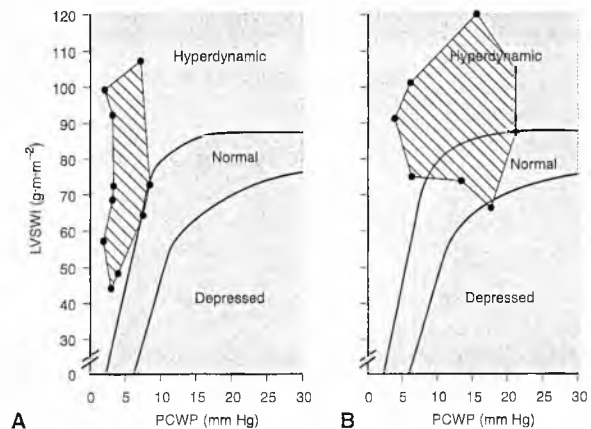
- a. 13%  
b. 25%  
c. 33%  
d. 0.5%
- 34-6. Risk factors for the development of preeclampsia include all **EXCEPT** which of the following?
- a. Obesity  
b. Nulliparity  
c. Hispanic ethnicity  
d. Maternal age >35 years
- 34-7. Soluble fms-like tyrosine kinase 1 (sFlt-1) causes inactivation of placental growth factor and leads to endothelial dysfunction. In the graph here, the red line represents which group of pregnant women?



Reproduced, with permission, from Cunningham FG, Leveno KJ, Bloom SL, et al: Williams Obstetrics, 23rd ed. New York, McGraw-Hill, 2010.

- a. Women who develop preeclampsia  
b. Women whose fetuses are growth restricted  
c. Women who are normotensive during pregnancy  
d. Women who ultimately suffer placental abruption

- 34-8. Disturbances in cardiovascular function related to preeclampsia include all **EXCEPT** which of the following?
- a. Reduced cardiac preload  
b. Increased cardiac afterload  
c. Decreased left ventricular mass  
d. Extravasation of intravascular fluid into extracellular space
- 34-9. Preeclamptic patients, with hemodynamic function shown in the hatched area of part A, are more likely to develop which of the following complications?

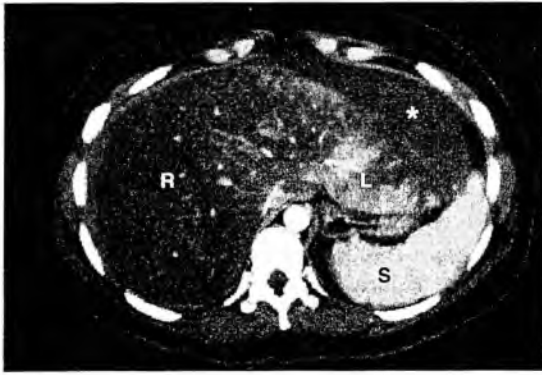


Reproduced, with permission, from Cunningham FG, Leveno KJ, Bloom SL, et al: Williams Obstetrics, 23rd ed. New York, McGraw-Hill, 2010.

- a. Pulmonary edema  
b. Myocardial infarction  
c. Acute tubular necrosis  
d. Supraventricular tachycardia
- 34-10. Which of the following is true of thrombocytopenia secondary to preeclampsia?
- a. It is an indication for cesarean route of delivery.  
b. It is an indication for delivery if levels drop below 140,000/ $\mu$ L.  
c. It is frequently accompanied by fetal thrombocytopenia.  
d. It may not reach a nadir until 48–72 hours after delivery.
- 34-11. Clinical evidence of hemolysis includes which of the following?

- a. Decrease in hematocrit  
b. Presence of spherocytes in peripheral blood  
c. Elevation of serum lactate dehydrogenase level  
d. All of the above

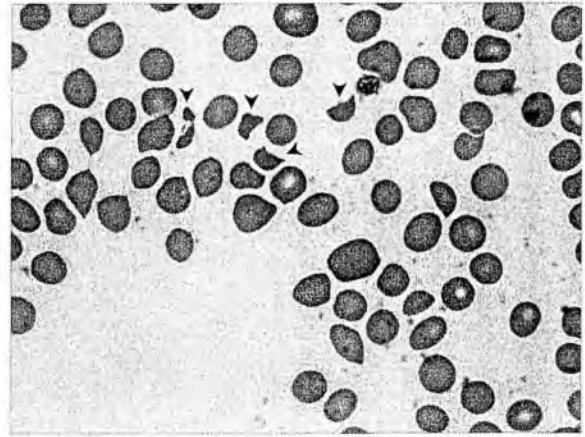
- 34-12.** What is the mortality rate when this complication occurs during pregnancy?



From Hay JE, Liver disease in pregnancy. *Hepatology*, vol. 47, no. 3, pp. 1067–1076. © 2008 American Association for the Study of Liver Diseases. Reproduced, with permission, of John Wiley & Sons, Inc.

- a. 5%
  - b. 10%
  - c. 30%
  - d. 50%
- 34-13.** Which of the following laboratory studies may aid in the differentiation between severe preeclampsia and acute fatty liver?
- a. Glucose
  - b. Creatinine
  - c. Platelet count
  - d. Transaminases
- 34-14.** Which of the following is accurate regarding the complaints of headache and scotomata in a patient with preeclampsia?
- a. These are secondary to reduced cerebral perfusion.
  - b. These are associated with a significant risk of blindness.
  - c. These are concerning as they frequently precede eclamptic seizures.
  - d. None of the above.

- 34-15.** This image demonstrates evidence of which of the following complications that may be present in preeclampsia?



Reproduced, with permission, from Knoop KJ, Stack LB, Storrow AB, et al: *Atlas of Emergency Medicine*, 3rd ed. New York, McGraw-Hill, 2010:849. Photo contributor: James P. Elrod, MD, PhD.

- a. Hemolysis
  - b. Leukocytosis
  - c. Thrombocytopenia
  - d. Iron-deficiency anemia
- 34-16.** Which of the following therapies is paramount in treating the complication shown in this computed tomography scan when it occurs during pregnancy?

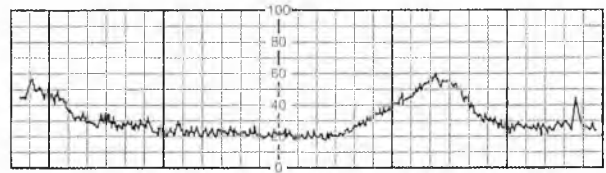
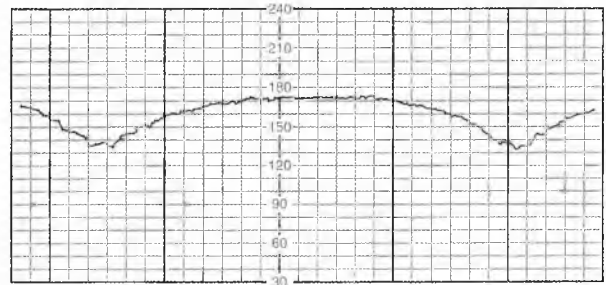


Reproduced, with permission, from Doherty GM: *Current Diagnosis & Treatment: Surgery*, 13th ed. New York, McGraw-Hill, 2010, Figure 36-7.

- a. Prophylactic intubation
- b. Immediate ventriculostomy
- c. Antihypertensive therapy to normalize blood pressure
- d. Platelet transfusions to keep platelet count  $>80,000/\mu\text{L}$

- 34-17.** Antihypertensive therapy for early mild gestational hypertension is associated with which of the following?
- Increased birthweights
  - Pregnancy prolongation
  - Lower mean blood pressure
  - Reduced rates of fetal-growth restriction
- 34-18.** Initial reports of expectant management of severe preeclampsia showed which of the following?
- Low risk of eclampsia
  - Increased maternal death rate
  - Perinatal mortality rates approached 90%
  - A 1-in-10 risk for placental abruption
- 34-19.** In the setting of severe early onset preeclampsia, delayed delivery allows for an average pregnancy prolongation of what length?
- 48 hours
  - 5–10 days
  - 20 days
  - 32 days
- 34-20.** A pregnant patient who has received a 6 g loading dose of magnesium sulfate and who is currently on a 2.5 g/h infusion has a seizure. Which of the following medications is appropriate to use to control the seizure?
- Midazolam
  - Amobarbital
  - Magnesium sulfate
  - All of the above
- 34-21.** Mild-to-moderate respiratory depression that accompanies magnesium sulfate toxicity is treated with which of the following intravenous medications?
- 0.5 mg atropine
  - 1 mg epinephrine
  - 20 mg furosemide
  - 1 g calcium gluconate

- 34-22.** In women with preeclampsia, causes for the fetal heart rate pattern seen here include all **EXCEPT** which of the following?



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- Cord compression
  - Placental abruption
  - Fetal-growth restriction
  - Maternal hypotension following hydralazine administration
- 34-23.** Appropriate antihypertensive therapy in the intrapartum period include all **EXCEPT** which of the following?
- Labetalol
  - Nifedipine
  - Furosemide
  - Nitroprusside
- 34-24.** Which of the following statements accurately describes the use of magnesium sulfate in preeclampsia?
- Phenytoin is equivalent to magnesium sulfate in the prevention of eclampsia.
  - Only women who have had an eclamptic seizure should receive this medication.
  - Women with “nonsevere” disease should receive magnesium sulfate during labor.
  - Magnesium sulfate reduces the risk of eclampsia by 58% in women with severe disease.

- 34-25.** In preeclamptic patients, which of the following adverse effects is seen with epidural analgesia during labor compared with intravenous analgesia?
- a. Decreased pain relief
  - b. Increased risk of pulmonary edema
  - c. Increased frequency of hypotension
  - d. Increased risk of cesarean delivery for dystocia
- 34-26.** Severe postpartum hypertension can be effectively treated with which of the following?
- a. Diuretics
  - b.  $\beta$ -Blockers
  - c. Calcium-channel blockers
  - d. All of the above
- 34-27.** For women diagnosed with preeclampsia before 30 weeks' gestation in their first pregnancy, what is the recurrence risk in a subsequent pregnancy?
- a. 4–6%
  - b. 10%
  - c. 40–60%
  - d. 90%

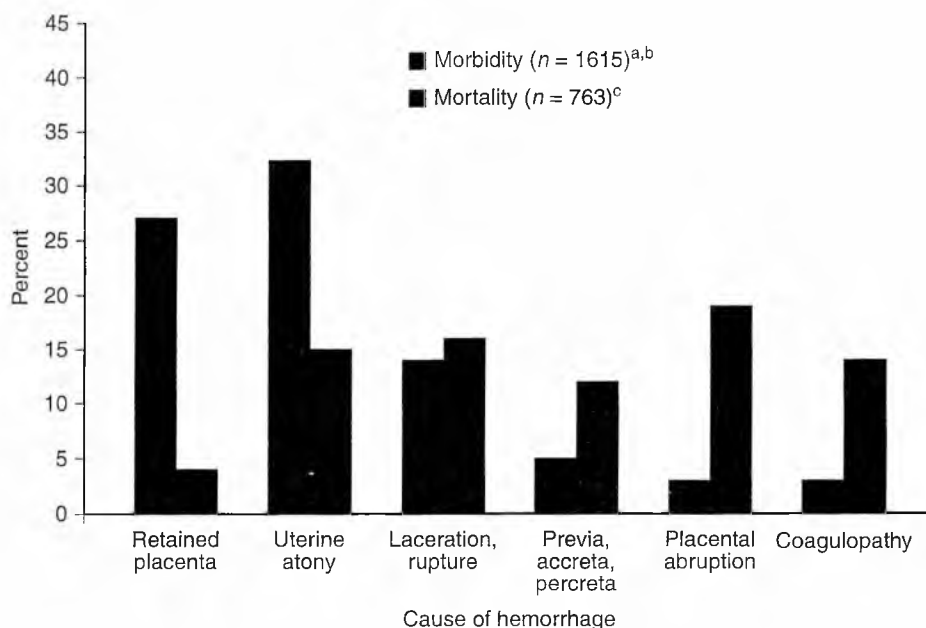
## Chapter 34 Answer Key

| Question number | Letter answer | Page cited | Header cited                           | Question number | Letter answer | Page cited | Header cited                                               |
|-----------------|---------------|------------|----------------------------------------|-----------------|---------------|------------|------------------------------------------------------------|
| 34-1            | b             | p. 707     | Table 34-1                             | 34-17           | c             | p. 731     | Antihypertensive Therapy for Mild to Moderate Hypertension |
| 34-2            | b             | p. 711     | Figure 34-2                            | 34-18           | c             | p. 732     | Delayed Delivery with Early Onset Severe Preeclampsia      |
| 34-3            | a             | p. 710     | Abnormal Trophoblastic Invasion        | 34-19           | b             | p. 732     | Delayed Delivery with Early Onset Severe Preeclampsia      |
| 34-4            | d             | p. 712     | Genetic Factors                        | 34-20           | d             | p. 737     | Magnesium Sulfate to Control Convulsions                   |
| 34-5            | a             | p. 709     | Incidence and Risk Factors             | 34-21           | d             | p. 738     | Pharmacology and Toxicology                                |
| 34-6            | c             | p. 709     | Incidence and Risk Factors             | 34-22           | a             | p. 740     | Hydralazine                                                |
| 34-7            | a             | p. 714     | Angiogenic and Antiangiogenic Proteins | 34-23           | c             | p. 741     | Diuretics                                                  |
| 34-8            | c             | p. 715     | Cardiovascular System                  | 34-24           | d             | p. 742     | Prevention of Eclampsia                                    |
| 34-9            | a             | p. 716     | Hemodynamic Changes                    | 34-25           | c             | p. 746     | Analgesia and Anesthesia                                   |
| 34-10           | d             | p. 717     | Thrombocytopenia                       | 34-26           | d             | p. 746     | Severe Post-Partum Hypertension                            |
| 34-11           | d             | p. 718     | Hemolysis                              | 34-27           | c             | p. 747     | Counseling for Future Pregnancy                            |
| 34-12           | c             | p. 721     | Liver                                  |                 |               |            |                                                            |
| 34-13           | a             | p. 721     | Liver                                  |                 |               |            |                                                            |
| 34-14           | c             | p. 722     | Clinical Manifestations                |                 |               |            |                                                            |
| 34-15           | a             | p. 718     | Hemolysis                              |                 |               |            |                                                            |
| 34-16           | c             | p. 724     | Cerebral Edema                         |                 |               |            |                                                            |

## CHAPTER 35

# Obstetrical Hemorrhage

- 35-1.** Which of the following is true of obstetrical hemorrhage?
- Responsible for 17% of pregnancy-related maternal deaths in the United States
  - Responsible for 12% of maternal deaths in the U.S. private sector
  - Single most important cause of maternal death worldwide
  - All of the above
- 35-2.** The figure below indicates that most maternal deaths are due to which of the following?
- Placental abruption
  - Uterine atony
  - Coagulopathy
  - Placenta accreta
- 35-3.** Which of the following is true regarding supracervical bleeding in the mid and third trimester?
- Usually from vasa previa
  - Infrequently associated with adverse outcomes
  - May involve separation of the placenta
  - None of the above
- 35-4.** Loss of more than what blood volume after completion of third-stage labor in vaginal deliveries defines postpartum hemorrhage?
- 400 cc
  - 500 cc
  - 600 cc
  - 1,000 cc
- 35-5.** What is the blood volume of a 5 feet, 120 lb woman during pregnancy?
- 3,000 cc
  - 4,000 cc
  - 4,500 cc
  - 5,000 cc

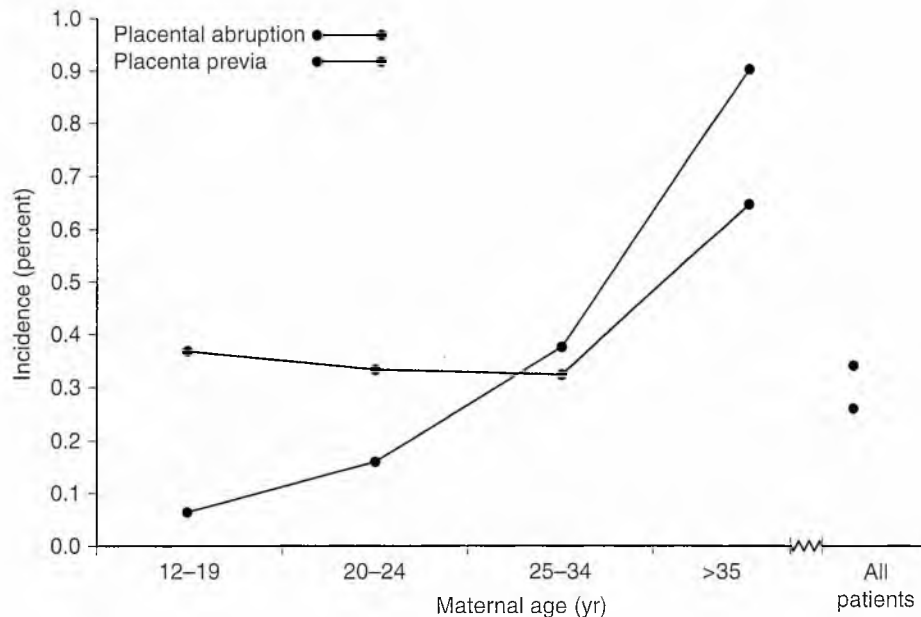




- 35-6. What is the amount of blood at term that flows through the intervillous space?
- 100 cc/min
  - 300 cc/min
  - 600 cc/min
  - 1,200 cc/min

- 35-10. This image indicates which of the following?

- Incidence of previa decreases with age.
- Incidence of placental abruption is not age dependent.
- Incidence of placental abruption decreases with age.
- Incidence of placental abruption increases with age.



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- 35-7. The mean increase in blood volume in women with preeclampsia is which of the following?
- 5-10%
  - 10-29%
  - 30-37%
  - 38-50%

- 35-11. What is the percentage of women with chronic hypertension who suffer placental abruption?

- 1.5%
- 10%
- 25%
- 50%

- 35-8. With a firm, well-contracted uterus, postpartum brisk bleeding is most likely due to which of the following?
- Lacerations
  - Retained placenta
  - Coagulopathy
  - Lower uterine segment atony

- 35-12. A woman who has suffered previous placental abruption during pregnancy has what recurrence risk?

- 5%
- 7%
- 12%
- 15%

- 35-9. What is the average frequency of placental abruption?
- 1/50
  - 1/100
  - 1/150
  - 1/200

**35-13.** What is the approximate age of the clot in this image?



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- a. Fresh
- b. Several hours old
- c. At least 24 hours old
- d. Several days old

**35-14.** With placental abruption severe enough to kill the fetus, what is the usual maternal blood volume lost?

- a. 500 cc
- b. 1,000 cc
- c. One-half of pregnancy blood volume
- d. None of the above

**35-15.** Placental abruption is linked to what percentage of pregnancy-associated acute renal failure?

- a. 10%
- b. 25%
- c. 33%
- d. 50%

**35-16.** This image demonstrates which of the following?



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- a. Myometritis
- b. Placenta accreta
- c. Couvelaire uterus
- d. Uterine didelphys

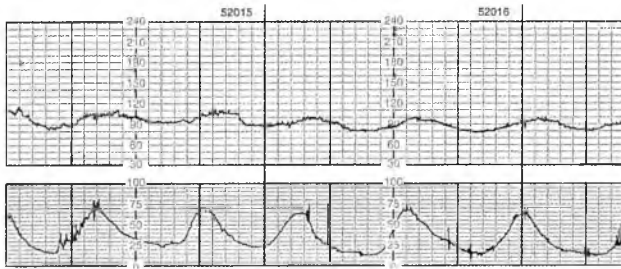
**35-17.** This fetal monitor tracing is from a case of placental abruption with fetal demise. Features include which of the following?

- a. Maternal ECG
- b. Increased resting tone
- c. Tachysystole
- d. All of the above



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35-18. This fetal monitor tracing demonstrates which of the following?



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- a. Maternal ECG
- b. Increased resting tone
- c. Less than 100 Montevideo units in 10 minutes
- d. Repetitive variable decelerations

35-19. Which of the following is illustrated in this image of an opened cesarean hysterectomy specimen?



- a. Complete placenta previa
- b. Partial placenta previa
- c. Marginal placenta previa
- d. Low lying placenta

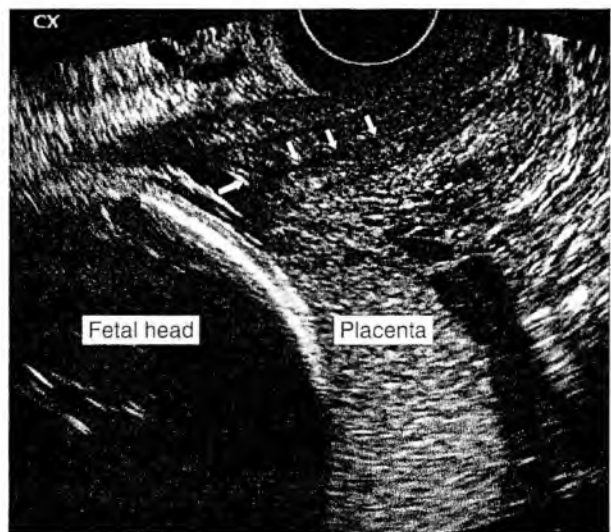
35-20. What is the incidence of placenta previa?

- a. 1/10
- b. 1/100
- c. 1/200
- d. 1/300

35-21. Risk factors for placenta previa include which of the following?

- a. Young age
- b. Smoking
- c. Nulliparity
- d. Low maternal serum  $\alpha$ -fetoprotein levels

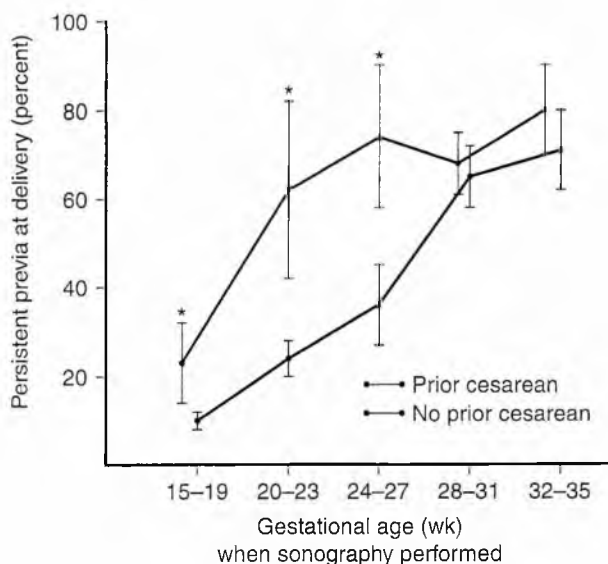
35-22. This image illustrates which of the following?



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- a. Transabdominal sonography
- b. Complete placenta previa
- c. Partial placenta previa
- d. Low lying placenta

**35-23.** This image illustrates which of the following points regarding placenta previa?



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- a. If found early in pregnancy, the persistence rate increases.
- b. Rates increase with a history of prior cesarean delivery.
- c. Diagnosed placenta previa has a higher persistence rate if there is a prior cesarean delivery.
- d. None of the above.

**35-24.** Which of the following is true of low birth weight associated with placenta previa?

- a. Most likely from fetal-growth restriction
- b. Confined to third-trimester fetuses
- c. Related to preterm birth
- d. None of the above

**35-25.** Which of the following is the most common cause of postpartum hemorrhage?

- a. Uterine atony
- b. Lacerations
- c. Retained placenta
- d. Coagulopathy

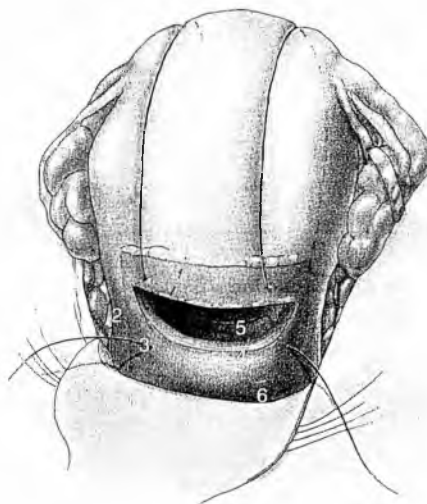
**35-26.** Which of the following are risk factors for uterine atony?

- a. High parity
- b. Overdistended uterus
- c. Vigorous uterine activity
- d. All of the above

**35-27.** Which of the following is an effective uterotonic agent used to treat uterine atony and postpartum hemorrhage?

- a. Oxytocin
- b. Carboprost
- c. Misoprostol
- d. All of the above

**35-28.** This image illustrates which of the following?



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- a. Transverse imbricating compression sutures
- b. B-lynnch technique
- c. Hysterotomy closure
- d. None of the above

**35-29.** In 2006, what was the reported incidence of placenta accreta?

- a. 1/2,500
- b. 1/535
- c. 1/210
- d. 1/125

**35-30.** Which of the following is diagnosed when placental villi attach abnormally to, but do not invade, the myometrium?

- a. Placenta increta
- b. Placenta percreta
- c. Placenta accreta
- d. None of the above

35-31. The photograph demonstrates which of the following?



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- a. Placenta accreta
- b. Placenta increta
- c. Placenta percreta
- d. None of the above

35-32. Using Doppler flow color mapping, which two factors are highly predictive of placenta accreta?



Reproduced, with permission, from Cunningham FG, Leveno KJ, Bloom SL, et al: Williams Obstetrics, 23rd ed. New York, McGraw-Hill, 2010.

- a. <1 mm between uterine serosa-bladder interface and retroplacental vessels; lateral placenta
- b. Large intraplacental lakes; fundal placenta
- c. <1 mm between uterine serosa-bladder interface and retroplacental vessels; large placental lakes
- d. None of the above

35-33. With extensive placental involvement and hemorrhage, successful management of placenta accreta/percreta usually includes which of the following?

- a. Hysterectomy
- b. Immediate blood replacement
- c. Full development of the bladder flap prior to hysterotomy
- d. All of the above

35-34. Uterine inversion occurs with what frequency?

- a. 1/10,000 deliveries
- b. 1/5,000 deliveries
- c. 1/3,000 deliveries
- d. 1/1,000 deliveries

35-35. Complete uterine inversion after delivery is almost always associated with which of the following?

- a. Placenta accreta
- b. Short umbilical cord
- c. Posterior placenta
- d. Strong traction on the umbilical cord

35-36. Initial management of uterine inversion includes which of the following?

- a. Call for help
- b. Replace uterus
- c. Establish large bore IV fluid systems
- d. Call for blood

35-37. Concerning vaginal lacerations involving the middle or upper third of the vagina, which of the following is true?

- a. These are often the result of a forceps delivery.
- b. These result from uterine overdistension.
- c. These are usually associated with injuries to the levator ani muscles.
- d. All of the above.

35-38. This image illustrates which of the following?



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- a. Vulvar hematoma
  - b. Vulvovaginal hematoma
  - c. Paravaginal hematoma
  - d. Retroperitoneal hematoma
- 35-39. Which of the following is the best treatment for vulvar hematomas that are extremely painful, but stable in size?
- a. Analgesics
  - b. Ice compress
  - c. Incision and drainage
  - d. Angiographic embolization
- 35-40. Which of the following is the most common cause of uterine rupture?
- a. Traumatic injury
  - b. Internal podalic version
  - c. Separation of a previous cesarean hysterotomy scar
  - d. Labor induction
- 35-41. Pregnancy induces appreciable increases in amounts of which of the following?
- a. Factors VII and VIII
  - b. Fibrinogen
  - c. Factors IX and X
  - d. All of the above
- 35-42. To promote clinical coagulation, fibrinogen levels must be maintained at approximately what level?
- a. 50 mg/dL
  - b. 100 mg/dL
  - c. 150 mg/dL
  - d. 200 mg/dL

35-43. After fetal death and delayed delivery, which is true regarding significant disruption of the maternal coagulation system?

- a. Rarely develops within 2 weeks after fetal death
- b. Frequently develops within 1 month after fetal death
- c. Develops in 40% of women after 1 month following fetal death
- d. All of the above

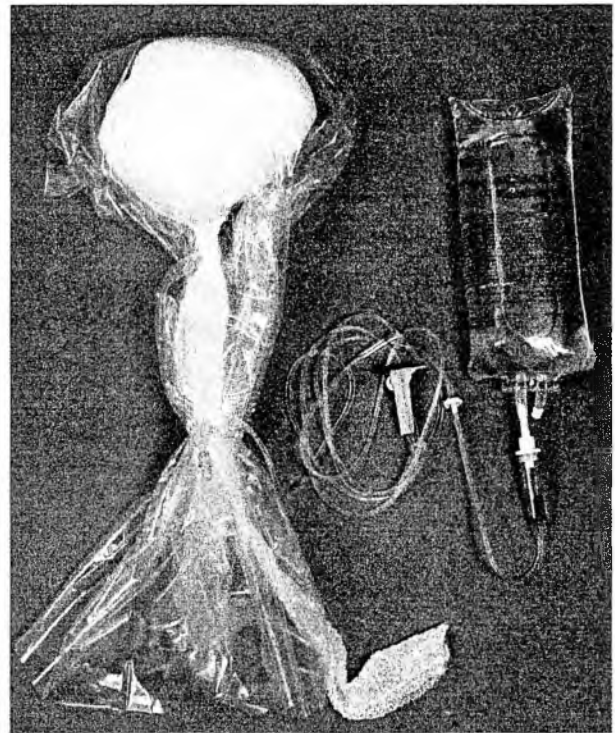
35-44. This photomicrograph illustrates which of the following?



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- a. Tuberculosis
  - b. Pulmonary embolism
  - c. Fetal squames in small pulmonary artery
  - d. Neonatal pneumonia
- 35-45. Serious disruption of the coagulation mechanism as the consequence of abortion may develop in which of the following circumstances?
- a. Prolonged retention of a dead fetus
  - b. Sepsis syndrome
  - c. Labor induction with a prostaglandin
  - d. All of the above
- 35-46. At least 70% of total blood volume in pregnant women is contained in which of the following?
- a. Venules
  - b. Large veins
  - c. Arterioles
  - d. Capillary beds

- 35-47.** During hemorrhage, there is relative maintenance of blood flow to which organ?
- Kidney
  - Adrenal gland
  - Uterus
  - Splanchnic beds
- 35-48.** Which of the following is one of the most important signs to follow in a woman with obstetrical hemorrhage?
- Pulse
  - Blood pressure
  - Respiratory rate
  - Urine output
- 35-49.** For the woman acutely bleeding, at what hematocrit should rapid blood transfusion begin?
- 30%
  - 27%
  - 25%
  - 20%
- 35-50.** The use of whole blood as opposed to packed red blood cells for replacement during obstetric hemorrhage is associated with which of the following?
- Decreased respiratory distress syndrome
  - Decreased renal failure
  - Decreased pulmonary edema
  - All of the above
- 35-51.** Each unit of donor platelets transfused should raise the platelet count by:
- 15,000/uL
  - 12,000/uL
  - 5,000/uL
  - 3,000/uL
- 35-52.** Which of the following correctly describes a unit of cryoprecipitate?
- It contains 200 mg of fibrinogen.
  - It is available in 50 cc solutions.
  - It contains platelets as well as factor XIII.
  - All of the above.
- 35-53.** Which of the following is true of transfusion-related lung injury (TRALI)?
- It usually develops within 3 hours.
  - It involves massive coagulopathy.
  - It is characterized by noncardiogenic pulmonary edema.
  - It complicates 1 in 2,000 transfusions.
- 35-54.** Of the following viral infections, which has the highest risk of transmission with blood products?
- Human immunodeficiency virus-1
  - Hepatitis C
  - Human immunodeficiency virus-2
  - Hepatitis B
- 35-55.** Which of the following is used primarily for surgical management of hemorrhage in lateral hysterotomy extensions?
- Uterine artery ligation
  - Uterine compression sutures
  - Internal iliac artery ligation
  - Hysterectomy
- 35-56.** The equipment in this image is used in which clinical situation?



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- It is used to pack the uterus to treat hemorrhage.
- It is used to pack the vagina to treat hemorrhage.
- It is used to pack the pelvis to treat hemorrhage following hysterectomy.
- None of the above.

## Chapter 35 Answer Key

| Question number | Letter answer | Page cited | Header cited                     | Question number | Letter answer | Page cited | Header cited                            |
|-----------------|---------------|------------|----------------------------------|-----------------|---------------|------------|-----------------------------------------|
| 35-1            | d             | p. 757     | Introduction                     | 35-30           | c             | p. 776     | Definitions                             |
| 35-2            | a             | p. 758     | Figure 35-1                      | 35-31           | c             | p. 778     | Figure 35-20                            |
| 35-3            | c             | p. 759     | Antepartum Hemorrhage            | 35-32           | c             | p. 779     | Figure 35-21                            |
| 35-4            | b             | p. 759     | Definition                       | 35-33           | d             | p. 779     | Delivery of the Placenta                |
| 35-5            | c             | p. 761     | Table 35-3                       | 35-34           | c             | p. 780     | Inversion of the Uterus                 |
| 35-6            | c             | p. 760     | Hemostasis at the Placental Site | 35-35           | d             | p. 780     | Inversion of the Uterus                 |
| 35-7            | b             | p. 760     | Clinical Characteristics         | 35-36           | a             | p. 781     | Management                              |
| 35-8            | a             | p. 761     | Diagnosis                        | 35-37           | a             | p. 782     | Vaginal Lacerations                     |
| 35-9            | d             | p. 761     | Significance and Frequency'      | 35-38           | a             | p. 783     | Figure 35-26, Puerperal Hematomas       |
| 35-10           | d             | p. 763     | Figure 35-6                      | 35-39           | c             | p. 783     | Treatment                               |
| 35-11           | a             | p. 764     | Hypertension                     | 35-40           | c             | p. 784     | Rupture of the Uterus                   |
| 35-12           | c             | p. 764     | Recurrent Abruptio               | 35-41           | d             | p. 785     | Pregnancy Hypercoagulability            |
| 35-13           | b             | p. 763     | Figure 35-5                      | 35-42           | c             | p. 787     | Hypofibrinogenemia                      |
| 35-14           | c             | p. 766     | Shock                            | 35-43           | a             | p. 787     | Fetal Death and Delayed Delivery        |
| 35-15           | c             | p. 766     | Renal Failure                    | 35-44           | c             | p. 790     | Figure 35-50                            |
| 35-16           | c             | p. 767     | Figure 35-7                      | 35-45           | d             | p. 790     | Coagulopathy                            |
| 35-17           | d             | p. 768     | Figure 35-9                      | 35-46           | a             | p. 791     | Hypovolemic Shock                       |
| 35-18           | b             | p. 769     | Figure 35-10                     | 35-47           | b             | p. 791     | Hypovolemic Shock                       |
| 35-19           | a             | p. 769     | Figure 35-11, Placenta Previa    | 35-48           | d             | p. 791     | Estimation of Blood Loss                |
| 35-20           | d             | p. 770     | Incidence                        | 35-49           | c             | p. 792     | Blood Replacement                       |
| 35-21           | b             | p. 770     | Associated Factors               | 35-50           | d             | p. 793     | Whole Blood and Blood Components        |
| 35-22           | c             | p. 772     | Figure 35-14                     | 35-51           | c             | p. 793     | Platelets                               |
| 35-23           | c             | p. 773     | Figure 35-15                     | 35-52           | a             | p. 794     | Cryoprecipitate                         |
| 35-24           | c             | p. 773     | Maternal and Perinatal Outcomes  | 35-53           | c             | p. 794     | Transfusion Related Lung Injury (TRALI) |
| 35-25           | a             | p. 774     | Uterine Atony                    | 35-54           | d             | p. 795     | Viral Transmission                      |
| 35-26           | d             | p. 774     | Uterine Atony                    | 35-55           | a             | p. 795     | Surgical Management of Hemorrhage       |
| 35-27           | d             | p. 775     | Uterotonic Agents                | 35-56           | c             | p. 797-8   | Pelvic Umbrella Pack, Figure 35-34      |
| 35-28           | b             | p. 777     | Figure 35-18                     |                 |               |            |                                         |
| 35-29           | c             | p. 777     | Incidence                        |                 |               |            |                                         |



## CHAPTER 36

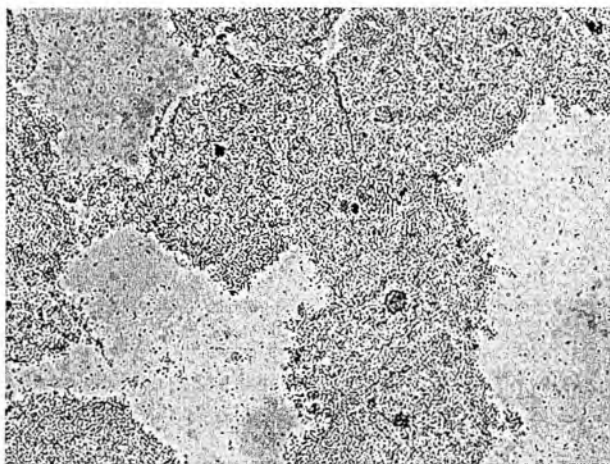
### Preterm Birth

- 36-1.** The term *appropriate for gestational age* designates newborns whose weights are between what percentiles?
- 2.5% and 97.5%
  - 5% and 95%
  - 10% and 90%
  - 15% and 85%
- 36-2.** Late preterm births, defined as those between 34 and 36 weeks' gestation, compose what percentage of all preterm births?
- 35%
  - 50%
  - 70%
  - 85%
- 36-3.** After achieving a birthweight of at least 1,000 g, neonatal survival rates reach 95% at approximately what gestational age with regard to infant sex?
- 28 weeks for females and 30 weeks for males
  - 30 weeks for both males and females
  - 30 weeks for females and 28 weeks for males
  - 28 weeks for both males and females
- 36-4.** According to the published data from the National Institute of Child Health and Human Development Neonatal Research Network, what is the single most prevalent complication that will be recognized at the time of hospital discharge in very-low-birth-weight neonates?
- Severe intraventricular hemorrhage
  - Necrotizing enterocolitis
  - Hydrocephalus
  - Bronchopulmonary dysplasia
- 36-5.** Compared with newborns at term, the risks to newborns between 34 and 36 weeks' gestation include which of the following?
- Increased serious morbidity but equivalent mortality rates
  - Increased serious morbidity and mortality rates
  - Increased serious morbidity but decreased mortality rates
  - Equivalent serious morbidity and mortality rates
- 36-6.** Much of the increase in the singleton preterm birth rate in the United States is explained by increases in which of the following?
- Spontaneous preterm labor
  - Premature rupture of fetal membranes
  - Pelvic infection rates
  - Indicated (iatrogenic) preterm births
- 36-7.** All EXCEPT which of the following lifestyle factors have been associated with spontaneous preterm labor and preterm birth?
- Obesity
  - Inadequate maternal weight gain
  - Poverty
  - Cigarette smoking
- 36-8.** In the United States, women classified in what racial group are consistently reported to be at higher risk of preterm birth?
- Hispanic
  - White (non-Hispanic)
  - African American
  - American Indian
- 36-9.** Intervals shorter than how many months between pregnancies have been associated with an increased risk for preterm birth?
- 18 months
  - 24 months
  - 36 months
  - 48 months
- 36-10.** For women who have one prior spontaneous preterm delivery at or before 34 weeks, what is the risk of recurrence?
- 5%
  - 9%
  - 16%
  - 25%

**36-11.** Antimicrobial treatment to prevent preterm labor due to microbial invasion has been demonstrated to have what effect?

- a. Reduced rate of spontaneous preterm birth
- b. Reduced rate of indicated preterm birth for chorioamnionitis
- c. Reduced rate of premature rupture of membranes
- d. No change in the rate of preterm birth

**36-12.** A 22-year-old G2P1 at 14 weeks' gestation complains of a malodorous vaginal discharge. A wet mount is performed with the findings illustrated in the image. You recommend antimicrobial treatment for this condition for what principal reason?



Reproduced, with permission, from Fauci AS, Braunwald E, Kasper DL: Harrison's Principles of Internal Medicine, 17th ed. New York, McGraw-Hill, 2008, Figure 124-3.

- a. Prevention of preterm birth
- b. Resolution of symptoms
- c. Avoidance of spontaneous abortion
- d. Treatment of intra-amniotic infection

**36-13.** Characteristics of Braxton Hicks contractions can include all **EXCEPT** which of the following?

- a. Irregular pattern
- b. Painful
- c. Cervical dilatation
- d. Nonrhythmic

**36-14.** Which of the following statements is true regarding the relationship between parity and asymptomatic cervical dilatation after midpregnancy?

- a. Risk for preterm delivery is increased only in nulliparous women.
- b. Risk for preterm delivery is increased in nulliparous and parous women.
- c. Risk for preterm delivery is increased only in parous women.
- d. There is no increased risk for preterm delivery.

**36-15.** When measured by transvaginal sonography, a shortened cervix has been associated with an increased rate of spontaneous preterm birth. This measurement is demonstrated in the ultrasound image as the distance between the two arrows (AF = amniotic fluid). In a population of normal women who are not at increased risk for preterm birth, what is the approximate mean cervical length at 24 weeks' gestation?



Reproduced, with permission, from Cunningham FG, Leveno KJ, Bloom SL, et al: Williams Obstetrics, 23rd ed. New York, McGraw-Hill, 2010.

- a. 25 mm
- b. 30 mm
- c. 35 mm
- d. 40 mm

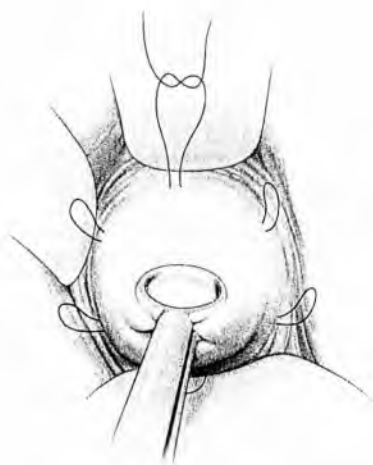
**36-16.** Recurrent midtrimester pregnancy loss in the setting of painless cervical dilatation is termed:

- a. Cervical incompetence
- b. Cervical ineptitude
- c. Cervical deficiency
- d. Cervical ineffectiveness

**36-17.** Home uterine activity monitoring has been associated with which of the following outcomes?

- a. Decreased rates of preterm premature rupture of membranes
- b. Decreased rates of spontaneous preterm birth
- c. Decreased rates of midtrimester pregnancy loss
- d. None of the above

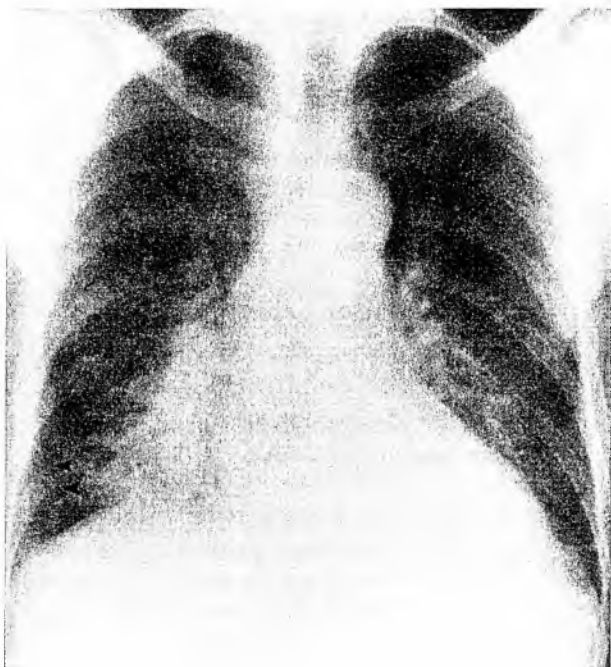
- 36-18.** Potential indications to perform the procedure demonstrated in the image include which of the following?



Reproduced, with permission, from Cunningham FG, Leveno KJ, Bloom SL, et al: Williams Obstetrics, 23rd ed. New York, McGraw-Hill, 2010.

- a. Recurrent midtrimester losses
  - b. Short cervix identified during sonography
  - c. Threatened preterm labor with cervical dilatation
  - d. All of the above
- 36-19.** Based on the known natural history of preterm premature ruptured membranes, approximately what percentage of women will be delivered within 48 hours of membrane rupture when this complication occurs between 24 and 34 weeks' gestation?
- a. Greater than 90%
  - b. 75%
  - c. 50%
  - d. Less than 25%
- 36-20.** What is the only reliable indicator of clinical chorioamnionitis in women with preterm ruptured membranes?
- a. Leukocytosis
  - b. Fever
  - c. Fetal tachycardia
  - d. Positive cervical or vaginal cultures
- 36-21.** A number of antibiotic regimens have been used to prolong the latency period in women with preterm ruptured membranes who are attempting expectant management. Which antibiotic should be avoided in this setting since it has been associated with an increased risk of necrotizing enterocolitis in the newborn?
- a. Amoxicillin
  - b. Amoxicillin-clavulanate
  - c. Ampicillin
  - d. Erythromycin
- 36-22.** Based on the recommendations by the American College of Obstetricians and Gynecologists, what is the most appropriate management of preterm premature rupture of membranes at or beyond 34 weeks' gestation?
- a. Expectant management
  - b. Expectant management unless fetal lung maturity is confirmed
  - c. A course of corticosteroids followed by delivery
  - d. Expedited delivery
- 36-23.** Corticosteroids administered to women at risk for preterm birth have been demonstrated to decrease rates of neonatal respiratory distress if the birth is delayed for at least what amount of time after the initiation of therapy?
- a. 12 hours
  - b. 24 hours
  - c. 36 hours
  - d. 48 hours

**36-24.** A 21-year-old G1P0 presents at 28 weeks' gestation in active preterm labor and intravenous terbutaline is administered for tocolysis. Approximately 2 hours after this therapy is initiated, she begins to cough, and her pulse oximetry reading is 80% on room air. The following chest radiograph is obtained. In which of the following clinical settings is the risk for this complication increased?



Reproduced, with permission, from Chen MYM, Pope Jr TL, Ott DJ. Basic Radiology. New York, McGraw-Hill, 2004, Figure 4-20.

**36-25.** When used as a tocolytic agent, indomethacin administration should generally not exceed 24 to 48 hours to prevent what complication?

- a. Maternal sepsis
- b. Concurrent administration of corticosteroids
- c. Twin pregnancy
- d. All of the above

- a. Oligohydramnios
- b. Fetal-growth restriction
- c. Placental abruption
- d. Necrotizing enterocolitis

**Chapter 36 Answer Key**

| Question number | Letter answer | Page cited | Header cited                         |
|-----------------|---------------|------------|--------------------------------------|
| <b>36-1</b>     | <b>c</b>      | p. 804     | Introduction                         |
| <b>36-2</b>     | <b>c</b>      | p. 804     | Mortality Rates of Preterm Infants   |
| <b>36-3</b>     | <b>a</b>      | p. 805     | Morbidity in Preterm Infants         |
| <b>36-4</b>     | <b>d</b>      | p. 807     | Table 36-3                           |
| <b>36-5</b>     | <b>b</b>      | p. 809     | Morbidity in Preterm Infants         |
| <b>36-6</b>     | <b>d</b>      | p. 811     | Reasons for Preterm Delivery         |
| <b>36-7</b>     | <b>a</b>      | p. 811     | Antecedents and Contributing Factors |
| <b>36-8</b>     | <b>c</b>      | p. 812     | Antecedents and Contributing Factors |
| <b>36-9</b>     | <b>a</b>      | p. 812     | Antecedents and Contributing Factors |
| <b>36-10</b>    | <b>c</b>      | p. 812     | Table 36-6                           |
| <b>36-11</b>    | <b>d</b>      | p. 812     | Antecedents and Contributing Factors |
| <b>36-12</b>    | <b>b</b>      | p. 813     | Antecedents and Contributing Factors |
| <b>36-13</b>    | <b>c</b>      | p. 814     | Diagnosis                            |

| Question number | Letter answer | Page cited | Header cited                                               |
|-----------------|---------------|------------|------------------------------------------------------------|
| <b>36-14</b>    | <b>b</b>      | p. 814     | Diagnosis                                                  |
| <b>36-15</b>    | <b>c</b>      | p. 815     | Diagnosis                                                  |
| <b>36-16</b>    | <b>a</b>      | p. 815     | Diagnosis                                                  |
| <b>36-17</b>    | <b>d</b>      | p. 816     | Diagnosis                                                  |
| <b>36-18</b>    | <b>d</b>      | p. 817     | Diagnosis                                                  |
| <b>36-19</b>    | <b>a</b>      | p. 818     | Management of Preterm Ruptured Membranes and Preterm Labor |
| <b>36-20</b>    | <b>b</b>      | p. 819     | Management of Preterm Ruptured Membranes and Preterm Labor |
| <b>36-21</b>    | <b>b</b>      | p. 820     | Management of Preterm Ruptured Membranes and Preterm Labor |
| <b>36-22</b>    | <b>d</b>      | p. 820     | Table 36-8                                                 |
| <b>36-23</b>    | <b>b</b>      | p. 821     | Preterm Labor with Intact Membranes                        |
| <b>36-24</b>    | <b>d</b>      | p. 823     | Preterm Labor with Intact Membranes                        |
| <b>36-25</b>    | <b>a</b>      | p. 825     | Preterm Labor with Intact Membranes                        |

## CHAPTER 37

### Postterm Pregnancy

**37-1.** What is the threshold of completed weeks, after which a pregnancy is considered prolonged?

- a. 40 weeks
- b. 41 weeks
- c. 42 weeks
- d. 43 weeks

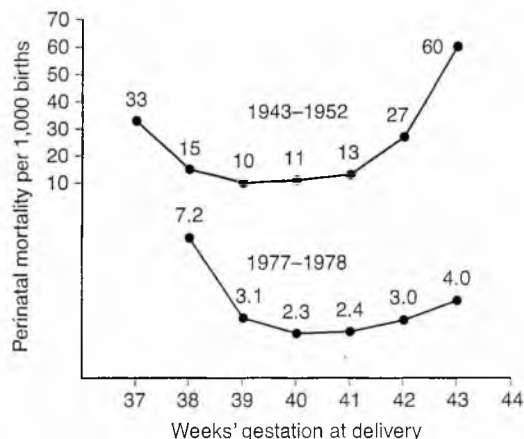
**37-2.** Which of the following is the most accurate way to confirm postterm pregnancy?

- a. Precise last menstrual period (LMP)
- b. Sonography performed at  $\leq 12$  weeks
- c. Sonography performed at 13–24 weeks
- d. Sonography performed at 36–42 weeks

**37-3.** Rare fetal-placental factors associated with postterm pregnancy include which of the following?

- a. Autosomal recessive placental sulfatase deficiency
- b. Adrenal hypoplasia
- c. Iniencephaly
- d. Wilms tumor

**37-4.** This image suggests which of the following?



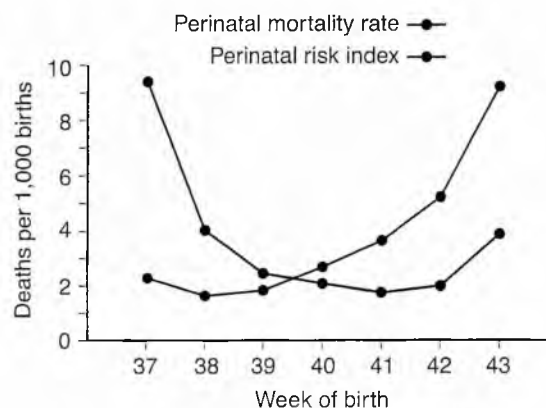
Reproduced, with permission, from Cunningham FG, Leveno KJ, Bloom SL, et al: Williams Obstetrics, 23rd ed. New York, McGraw-Hill, 2010.

- a. Perinatal mortality rate (PMR) increases after 40 weeks.
- b. PMR was higher in 1977–1978.
- c. PMR increases after 41 weeks.
- d. PMR was lowest in 1943–1952.

**37-5.** Concerning Parkland Hospital between 1988 and 1998, which of the following is true?

- a. Labor was induced in 55% of pregnancies completing 42 weeks.
- b. The rate of cesarean delivery and fetal distress was increased in those at 42 completed weeks.
- c. Infants of postterm pregnancies were admitted predominantly to special care nurseries.
- d. The incidence of neonatal seizures and deaths tripled at 42 completed weeks.

**37-6.** This image illustrates which of the following?



Reproduced, with permission, from Cunningham FG, Leveno KJ, Bloom SL, et al: Williams Obstetrics, 23rd ed. New York, McGraw-Hill, 2010.

- a. Highest PMR occurs at 43 weeks
- b. Perinatal risk index, which accounts for risk of all ongoing pregnancies, is highest at 36 weeks
- c. Highest PMR occurs at 38 weeks
- d. None of the above

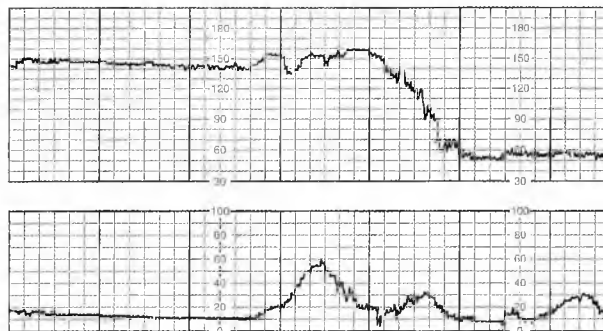
**37-7.** Which of the following is true concerning the syndrome afflicting this infant?



Reproduced, with permission, from Cunningham FG, Leveno KJ, Bloom SL, et al: Williams Obstetrics, 23rd ed. New York, McGraw-Hill, 2010.

- a. Its incidence in pregnancies between 41 and 43 weeks is 20%.
  - b. Neurological deficits are found in 23% of affected newborns.
  - c. Associated oligohydramnios substantially increases the likelihood at 42 weeks.
  - d. Features include simian crease and low set ears.
- 37-8.** Which of the following may be associated with placental dysfunction?
- a. Increased placental apoptosis
  - b. Increased cord blood erythropoietin
  - c. Postmaturity syndrome
  - d. All of the above

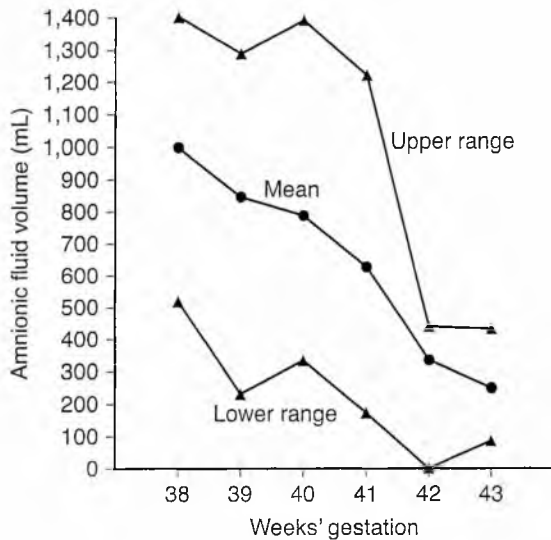
**37-9.** This figure demonstrates which of the following?



Reproduced, with permission, from Cunningham FG, Leveno KJ, Bloom SL, et al: Williams Obstetrics, 23rd ed. New York, McGraw-Hill, 2010.

- a. Variable deceleration
  - b. Late deceleration
  - c. Prolonged deceleration
  - d. None of the above
- 37-10.** Which of the following is true regarding fetal-growth restriction in the postterm fetus?
- a. Rare occurrence
  - b. Not an indication for delivery
  - c. Associated with increased perinatal morbidity and mortality rates
  - d. None of the above
- 37-11.** Concerning amniotic fluid, which of the following is true?
- a. Oligohydramnios is only associated with risk to the postterm fetus.
  - b. The amniotic fluid index (AFI) is more specific for abnormal fetal outcomes than the deepest vertical pocket.
  - c. Normal amniotic fluid precludes all normal outcomes.
  - d. With oligohydramnios in postterm pregnancy, the incidence of fetal distress in labor is increased.

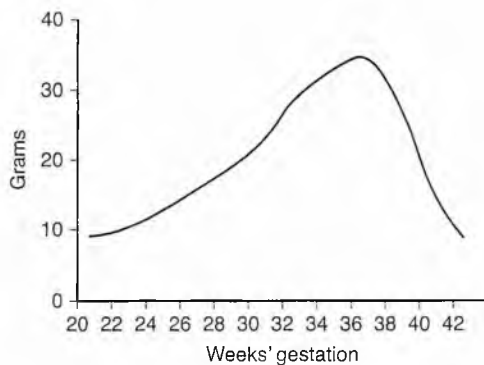
**37-12.** This image illustrates which of the following?



Reproduced, with permission, from Cunningham FG, Leveno KJ, Bloom SL, et al: Williams Obstetrics, 23rd ed. New York, McGraw-Hill, 2010.

- a. The largest amount of amnionic fluid is present before term.
- b. Amnionic fluid decreases from term until 43 weeks.
- c. The smallest amount of fluid in the upper range is seen at 41 weeks.
- d. The greatest amount of fluid in the lower range is approximately 700 cc at 38 weeks.

**37-13.** This image illustrates which of the following?



Reproduced, with permission, from Cunningham FG, Leveno KJ, Bloom SL, et al: Williams Obstetrics, 23rd ed. New York, McGraw-Hill, 2010.

- a. Fetuses lose weight after 40 weeks.
- b. The peak of fetal growth occurs in the late midtrimester.
- c. Fetal growth continues until at least 42 weeks.
- d. Maternal and fetal morbidity associated with macrosomia would be mitigated with timely induction.

**37-14.** In the presence of macrosomia, which of the following is true?

- a. Early induction decreases maternal and fetal morbidity rates.
- b. Cesarean delivery should be performed for estimated fetal weight greater than 4,000 g.
- c. Cesarean delivery is recommended for estimated fetal weight greater than 4,500 g if there is prolonged second-stage labor.
- d. None of the above.

**37-15.** Concerning the management of prolonged pregnancies, which of the following is true?

- a. Some form of intervention is indicated.
- b. Of American College of Obstetrician and Gynecologists (ACOG) members, 50% routinely induce women at 41 completed weeks.
- c. Of ACOG members, 50% routinely induce women at 42 completed weeks.
- d. All of the above

**37-16.** Concerning an unfavorable cervix, research supports which of the following statements?

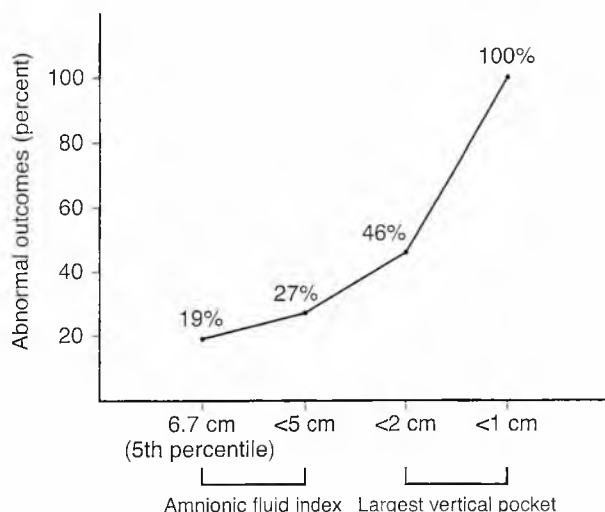
- a. Of women at 42 weeks, 92% have an unfavorable cervix, when defined as a Bishop score of less than 7.
- b. The risk of cesarean delivery is increased twofold in those with a closed cervix at 42 weeks undergoing labor induction.
- c. A cervical length of 3 cm or less was predictive of successful induction.
- d. All of the above.

**37-17.** Concerning membrane stripping, research supports which of the following statements?

- a. It increases maternal infection rates.
- b. It decreases the need for induction.
- c. Its complications include bleeding and pain.
- d. All of the above.



37-18. This image illustrates which of the following?



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- Abnormal fetal outcomes occur when the AFI is at the 5th centile.
- When the AFI is <2 cm, abnormal outcomes were increased relative to those at 5th centile.
- An AFI <1 cm had 100% abnormal outcomes.
- If the largest vertical pocket (LVP) was <5 cm, there were 27% abnormal outcomes.

37-19. Concerning the station of the vertex in nulliparous pregnancies at the beginning of induction for postterm pregnancy, research supports which of the following statements?

- The cesarean delivery rate is directly related to station.
- The cesarean delivery rate is 6% if the vertex is at -1 station.
- The cesarean delivery rate is 43% if the vertex is at -3 station.
- All of the above.

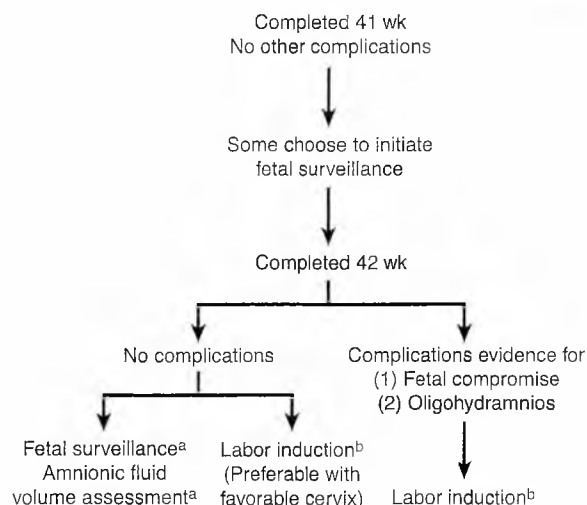
37-20. Concerning induction versus fetal testing in prolonged pregnancies, research supports which of the following statements?

- Testing is associated with decreased cesarean delivery rates.
- No differences in perinatal death and cesarean delivery rates are found between the two approaches.
- Most studies are performed during the 43rd week of gestation.
- None of the above.

37-21. From one observational study by Usher and colleagues (1988), which of the following perinatal death rates is correct?

- 3.0/1,000 at 42 weeks
- 1.5/1,000 at 41 weeks
- 0.7/1,000 at 40 weeks
- 0.3/1,000 at 39 weeks

37-22. Concerning this algorithm that summarizes ACOG recommendations, which of the following is true?



Reproduced, with permission, from Cunningham FG, Leveno KJ, Bloom SL, et al: Williams Obstetrics, 23rd ed. New York, McGraw-Hill, 2010.

- Induction should be performed at 41 completed weeks.
- If no complications exist, labor should be induced at 42 completed weeks.
- Fetal surveillance should be initiated for a pregnancy with oligohydramnios at 42 completed weeks.
- All of the above.

37-23. Which of the following approaches are followed at Parkland Hospital?

- With certain gestational age, induction is performed at 42 completed weeks.
- With uncertain gestational age, women are managed with weekly AFI measurement and nonstress testing (NST).
- With certain gestational age and failed first induction, a second induction is instituted within 3 days.
- All of the above.

**37-24.** Which of the following is true of amnioinfusion?

- a. It does not reduce the risk for meconium aspiration.
- b. It should be immediately performed following amniotomy in postterm pregnancies with oligohydramnios.
- c. It is a reasonable treatment for repetitive late decelerations.
- d. It is associated with a decreased risk of perinatal death.

**37-25.** Concerning the nulliparous woman in early labor, which of the following is true?

- a. If cephalopelvic disproportion is suspected, immediate cesarean delivery should be performed.
- b. If there are repetitive variable decelerations, amnioinfusion is appropriate.
- c. If there is thin meconium, strong consideration should be given to effect prompt cesarean delivery.
- d. None of the above.

**Chapter 37 Answer Key**

| Question number | Letter answer | Page cited | Header cited                                    |
|-----------------|---------------|------------|-------------------------------------------------|
| <b>37-1</b>     | <b>c</b>      | p. 832     | Introduction                                    |
| <b>37-2</b>     | <b>b</b>      | p. 832     | Estimated Gestational Age Using Menstrual Dates |
| <b>37-3</b>     | <b>b</b>      | p. 833     | Incidence                                       |
| <b>37-4</b>     | <b>c</b>      | p. 833     | Figure 37-1                                     |
| <b>37-5</b>     | <b>b</b>      | p. 833     | Perinatal Morbidity                             |
| <b>37-6</b>     | <b>b</b>      | p. 834     | Figure 37-2                                     |
| <b>37-7</b>     | <b>c</b>      | p. 834     | Postmaturity Syndrome, Figure 37-3              |
| <b>37-8</b>     | <b>d</b>      | p. 835     | Placental Dysfunction                           |
| <b>37-9</b>     | <b>c</b>      | p. 836     | Figure 37-5                                     |
| <b>37-10</b>    | <b>c</b>      | p. 836     | Fetal Growth Restriction                        |
| <b>37-11</b>    | <b>d</b>      | p. 836     | Oligohydramnios                                 |
| <b>37-12</b>    | <b>b</b>      | p. 836     | Figure 37-8                                     |
| <b>37-13</b>    | <b>c</b>      | p. 837     | Figure 37-4                                     |

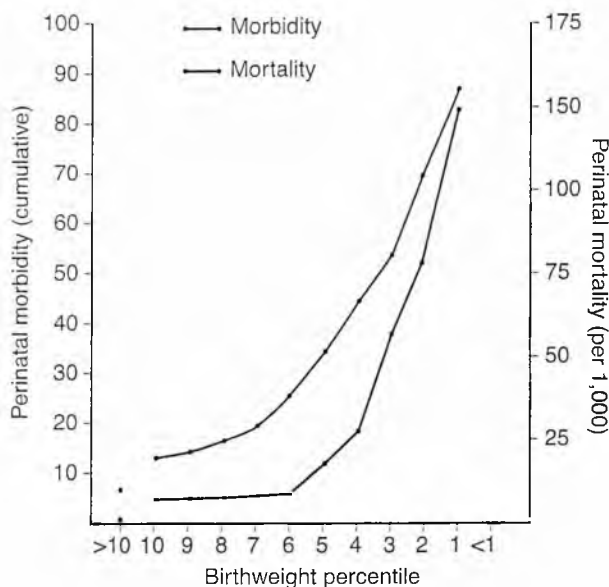
| Question number | Letter answer | Page cited | Header cited                   |
|-----------------|---------------|------------|--------------------------------|
| <b>37-14</b>    | <b>c</b>      | p. 837     | Macrosomia                     |
| <b>37-15</b>    | <b>a</b>      | p. 837     | Management                     |
| <b>37-16</b>    | <b>d</b>      | p. 837     | Unfavorable Cervix             |
| <b>37-17</b>    | <b>c</b>      | p. 838     | Cervical Ripening              |
| <b>37-18</b>    | <b>a</b>      | p. 838     | Figure 37-9                    |
| <b>37-19</b>    | <b>d</b>      | p. 838     | Station of Vertex              |
| <b>37-20</b>    | <b>b</b>      | p. 838     | Induction Versus Fetal Testing |
| <b>37-21</b>    | <b>a</b>      | p. 838     | Induction Versus Fetal Testing |
| <b>37-22</b>    | <b>b</b>      | p. 839     | Figure 37-10                   |
| <b>37-23</b>    | <b>d</b>      | p. 839     | Parkland Hospital              |
| <b>37-24</b>    | <b>a</b>      | p. 840     | Intrapartum Management         |
| <b>37-25</b>    | <b>b</b>      | p. 840     | Intrapartum Management         |

## CHAPTER 38

# Fetal Growth Disorders

- 38-1.** Of newborns in the United States, the proportion of those weighing <2,500 g has done which of the following during the last 20 years?
- Increased
  - Remained unchanged
  - Gradually decreased
  - Dramatically declined
- 38-2.** The average weight gain (grams per day) after 32 weeks approximates which of the following?
- 5–10 g/d
  - 20 g/d
  - 30 g/d
  - 40 g/d
- 38-3.** Which of the following cell growth phases occurs during the first 16 weeks of gestation?
- Cellular hyperplasia and hypertrophy
  - Cellular hyperplasia
  - Cellular hypertrophy
  - Apoptosis
- 38-4.** Most clinically meaningful adverse outcomes are in neonates born weighing below what percentile?
- 20th
  - 10th
  - 5th
  - 3rd

- 38-5.** According to this image, perinatal mortality rates increase most rapidly with birthweights in which of the following percentile groups?

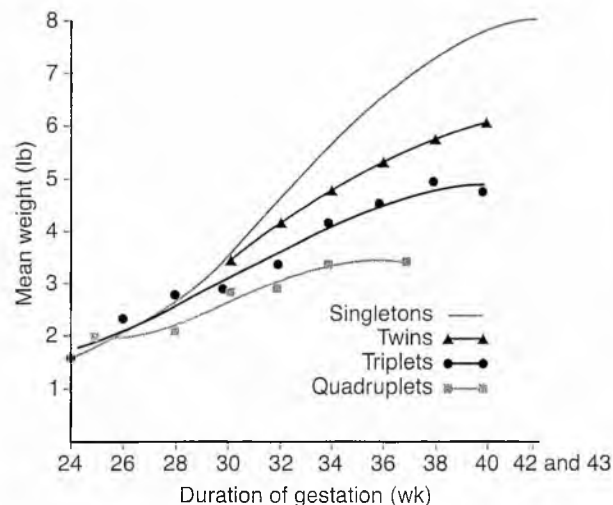


Reproduced, with permission, from Cunningham FG, Leveno KJ, Bloom SL, et al: Williams Obstetrics, 23rd ed. New York, McGraw-Hill, 2010.

- >10
  - <10
  - <5
  - <3
- 38-6.** Which of the following suggests a possible role for abnormal immune activation and abnormal placentation in the genesis of growth-restricted infants and preeclampsia?
- Elevated triglyceride levels
  - Hypoglycemia
  - Elevated endothelin-1 levels
  - Increased insulin sensitivity
- 38-7.** Which perinatal complication is not associated with fetal growth restriction?
- Birth asphyxia
  - Sepsis
  - Hypoglycemia
  - Hypothermia

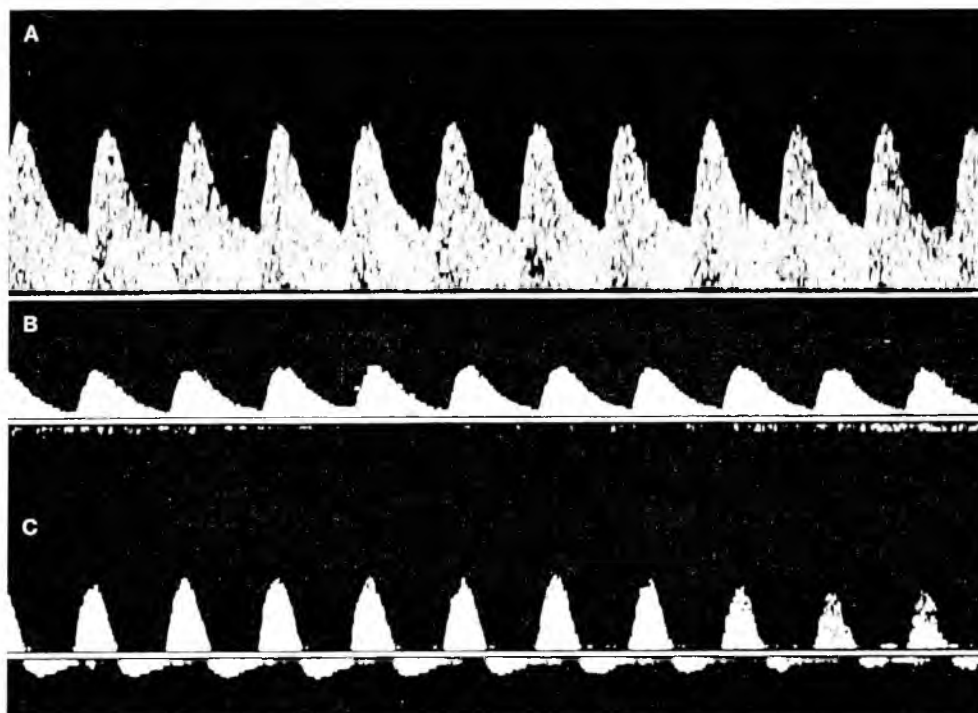
- 38-8.** Symmetric growth restriction is characterized as a reduction in which of the following?
- Head size
  - Body size
  - Both body and head size
  - Body and femur length
- 38-9.** Lack of maternal weight gain in which period especially correlates with decreased fetal birthweight?
- Preconception
  - First trimester
  - Second trimester
  - Third trimester
- 38-10.** In which chromosomal aneuploidy is fetal growth restriction virtually always present?
- Trisomy 21
  - Trisomy 18
  - Trisomy 13
  - 45,X
- 38-11.** Placental mosaicism of which of the following trisomies may be responsible for previously unexplained cases of fetal growth restriction?
- Trisomy 13
  - Trisomy 16
  - Trisomy 18
  - Trisomy 21
- 38-12.** Serial fundal height measurements detect what percentage of fetal growth restriction cases?
- 25
  - 40
  - 70
  - 85

- 38-13.** Given this image, which of the following is true?



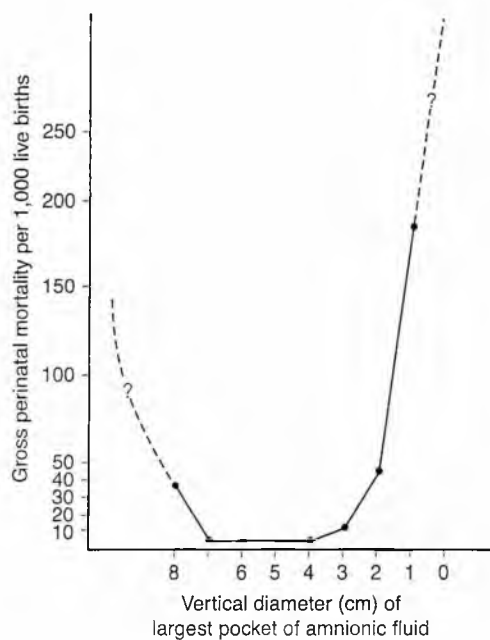
Reproduced, with permission, from Cunningham FG, Leveno KJ, Bloom SL, et al: Williams Obstetrics, 23rd ed. New York, McGraw-Hill, 2010.

- On average at 20 weeks, weights between singletons and fetuses in multifetal gestations vary markedly.
  - Mean duration of quadruplet gestation is approximately 37 weeks.
  - Singleton and twin growth is similar until approximately 30 weeks.
  - Mean triplet weights are similar to twins at 30 weeks.
- 38-14.** A fetal abdominal circumference below which of the following percentiles is highly suggestive of fetal growth restriction?
- 15
  - 10
  - 5
  - 3
- 38-15.** Which of the following is the most significant method of preventing fetal growth restriction?
- Antihypertensive medication
  - Low-dose aspirin
  - Accurate pregnancy dating
  - Iron therapy
- 38-16.** What percentage of growth-restricted fetuses can be detected by sonography if performed within 4 weeks of delivery?
- 30
  - 50
  - 70
  - 90



Reproduced, with permission, from Cunningham FG, Leveno KJ, Bloom SL, et al: *Williams Obstetrics*, 23rd ed. New York, McGraw-Hill, 2010.

**38-17.** As shown in this figure, perinatal mortality rates are lowest with which of the following largest-vertical-pocket measurements?



Reproduced, with permission, from Cunningham FG, Leveno KJ, Bloom SL, et al: *Williams Obstetrics*, 23rd ed. New York, McGraw-Hill, 2010.

**38-18.** In this umbilical artery Doppler velocimetry study, which pattern represents absent end diastolic flow?

- A
- B
- C
- None of the above

**38-19.** With fetal growth restriction near term (34 weeks) and oligohydramnios, which of the following is the most appropriate management?

- Fetal surveillance and delivery by 37 weeks
- Cordocentesis and diagnostic karyotyping
- Delivery
- Bed rest and fetal surveillance

**38-20.** In the United States, which of the following trends most accurately describes the incidence of fetal macrosomia?

- Slightly increasing
- Dramatically increasing
- Unchanged
- Decreasing

- <2 cm
- 2 cm
- 7 cm
- >8 cm

- 38-21.** According to the American College of Obstetricians and Gynecologists, which of the following is the lower fetal weight limit above which macrosomia is defined?
- 4,000 g
  - 4,250 g
  - 4,500 g
  - 5,000 g
- 38-22.** Which of the following maternal factors is associated with macrosomia?
- Collagen vascular disease
  - Hyperthyroidism
  - Multiparity
  - Hypertension
- 38-23.** How does clinic estimation compare with sonography in the prediction of macrosomia?
- Worse
  - Similar
  - Moderately superior
  - Dramatically superior
- 38-24.** In pregnancies with estimated fetal weights  $\geq 4,000$  g after term (37 weeks), induction has which of the following effects?
- Decreases shoulder dystocia rates
  - Increases cesarean delivery rates
  - Decreases cesarean delivery rates
  - Decreases postpartum hemorrhage rates
- 38-25.** The percentage of shoulder dystocia cases is decreased by a protocol of routine cesarean delivery for sonographic measurements of fetal weight above what threshold in diabetic mothers?
- 4,000 g
  - 4,250 g
  - 4,500 g
  - 4,800 g

## Chapter 38 Answer Key

| Question number | Letter answer | Page cited | Header cited                                       | Question number | Letter answer | Page cited | Header cited                    |
|-----------------|---------------|------------|----------------------------------------------------|-----------------|---------------|------------|---------------------------------|
| 38-1            | a             | p. 842     | Introduction                                       | 38-14           | c             | p. 849     | Sonographic Measurements        |
| 38-2            | c             | p. 842     | Normal Fetal Growth                                | 38-15           | c             | p. 849     | Sonographic Measurements        |
| 38-3            | b             | p. 842     | Normal Fetal Growth                                | 38-16           | c             | p. 849     | Sonographic Measurements        |
| 38-4            | d             | p. 843     | Definition                                         | 38-17           | c             | p. 851     | Figure 38-7                     |
| 38-5            | d             | p. 843     | Figure 38-2                                        | 38-18           | b             | p. 851     | Figure 38-8                     |
| 38-6            | c             | p. 845     | Metabolic Abnormalities                            | 38-19           | c             | p. 852     | Growth Restriction              |
| 38-7            | b             | p. 845     | Morbidity and Mortality                            | 38-20           | d             | p. 853     | Macrosomia                      |
| 38-8            | c             | p. 846     | Symmetrical versus Asymmetrical Growth Restriction | 38-21           | c             | p. 854     | Empirical Birthweight           |
| 38-9            | c             | p. 846     | Poor Maternal Nutrition                            | 38-22           | c             | p. 854     | Table 38-3                      |
| 38-10           | b             | p. 847     | Chromosomal Aneuploidies                           | 38-23           | b             | p. 854     | Diagnosis                       |
| 38-11           | b             | p. 847     | Chromosomal Aneuploidies                           | 38-24           | b             | p. 855     | Prevention of Shoulder Dystocia |
| 38-12           | b             | p. 849     | Uterine Fundal Height                              | 38-25           | b             | p. 855     | Prevention of Shoulder Dystocia |
| 38-13           | c             | p. 849     | Figure 38-4                                        |                 |               |            |                                 |



## CHAPTER 39

# Multifetal Gestation

39-1. Compared with singletons, multifetal pregnancies are at increased risk for all **EXCEPT** which of the following complications?

- a. Preeclampsia
- b. Maternal death
- c. Gestational diabetes
- d. Postterm pregnancy

39-2. Which of the following mechanisms may prevent monozygotic twins from being "identical" at birth?

- a. Postzygotic mutation
- b. Unequal division of the zygote
- c. Variable expression of the same genetic disease
- d. All of the above

39-3. Superfecundation describes which of the following?

- a. Fertilization of one ovum that splits into two during the same menstrual cycle
- b. Fertilization of two ova within the same menstrual cycle, but not at the same coitus
- c. Fertilization of two ova separated in time by an interval as long as or longer than a menstrual cycle
- d. None of the above

39-4. This image below of a twin pregnancy indicates which of the following?



- a. There are two placentas.
- b. The twins must be monozygotic.
- c. The twins share the same amnion.
- d. They must have arisen from two separate ova.

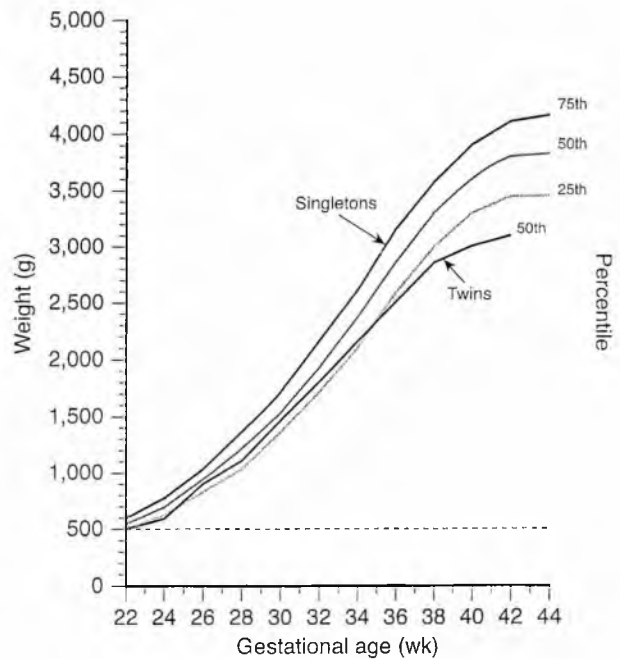
39-5. In this sonographic image, fetal heads are labeled A and B. Division of the zygote that led to this pregnancy must have occurred how many days following fertilization?



- a. 0-4
- b. 4-8
- c. 8-12
- d. >13

- 39-6. Which of the following is true regarding the frequency of monozygotic twinning?
- It is highest in Nigeria.
  - It is approximately 1 in 250.
  - It can be modified with follicle-stimulating hormone (FSH) treatment.
  - It increases with maternal age and parity.
- 39-7. All **EXCEPT** which of the following statements regarding selective reduction of a higher order multifetal pregnancy down to twins are true?
- It can lead to maternal depression.
  - Selective reduction and selective termination have equivalent outcomes.
  - It is easiest to perform at 10–13 weeks' gestation.
  - It increases the likelihood that pregnancy will result in at least one live birth.
- 39-8. Which of the following statements regarding chorionicity is true?
- Monochorionic membranes have four layers.
  - A dichorionic pregnancy is always dizygotic.
  - Monochorionic twins are always monozygotic.
  - Determination of chorionicity is easiest in the second trimester.
- 39-9. Among risk factors for occurrence of multifetal pregnancy, which is the strongest?
- Multiparity
  - Advanced maternal age
  - Use of clomiphene citrate
  - Maternal history of being a twin herself
- 39-10. Differential diagnosis of clinically suspected twins includes all **EXCEPT** which of the following?
- Hydramnios
  - Leiomyomas
  - Blighted ovum
  - Molar pregnancy
- 39-11. Regarding maternal adaptations to multifetal pregnancy, which of the following is unchanged in twin pregnancy compared with that in singleton pregnancy?
- Blood loss at delivery
  - Blood volume increase
  - Pulmonary function tests
  - Extent of maternal anemia

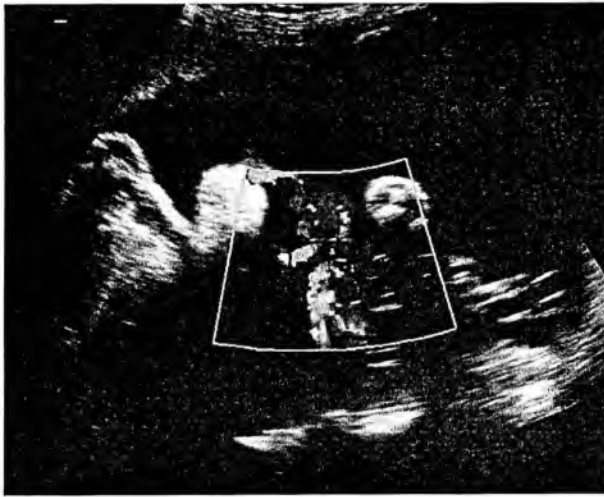
- 39-12. Comparing singleton and twin growth curves in this graph, which of the following statements is accurate?



Reproduced, with permission, from Arbuckle TE, Wilkins R, and Sherman GJ: Birth weight percentiles by gestational age in Canada, *Obstetrics & Gynecology*, 1993, vol. 81, no. 1, pp. 39–48.

- All twins are growth restricted.
  - At term, 50% of twins are growth restricted.
  - Twin growth curves start to diverge at 22–24 weeks.
  - Growth differences in twins occur as early as the first trimester.
- 39-13. Among complications seen in twins, all **EXCEPT** which of the following are only associated with monochorionic pregnancies?
- Fetus in fetu
  - Acardiac twin
  - Talipes equinovarus
  - Twin-twin transfusion
- 39-14. Which of the following is the major reason for neonatal morbidity and mortality in twins?
- Preterm birth
  - Congenital malformations
  - Abnormal growth patterns
  - Twin-twin transfusion syndrome

- 39-15. Which of the following statements is accurate if this twin-pregnancy complication is diagnosed after 20 weeks?



- a. It has a 50% mortality rate.
  - b. It precludes vaginal delivery.
  - c. It reflects conjoined twins.
  - d. One of the twins should have its cord radioablated.
- 39-16. Which of the following is the most common type of vascular anastomosis seen in monochorionic twin placentas?
- a. Deep artery-vein
  - b. Superficial vein-vein
  - c. Superficial artery-vein
  - d. Superficial artery-artery
- 39-17. Which of the following statements is accurate regarding twin reversed-arterial-perfusion (TRAP)?
- a. There is a large arteriovenous placental shunt.
  - b. The donor has an increased risk of cardiomegaly and high-output heart failure.
  - c. The most effective treatment is injection of KCl into the recipient twin.
  - d. Placental arterial perfusion pressure in the recipient exceeds that of the donor.

- 39-18. A pair of monochorionic twins presents with this sonographic finding and with significant growth discordancy at 17 weeks. Also, absent bladder filling is noted in the smaller twin. Twin-twin transfusion syndrome (TTTS) is suspected and is categorized as which of the following Quintero stages?



- a. I
  - b. II
  - c. III
  - d. IV
- 39-19. In a randomized trial of twins with severe TTTS, which of the following therapies has shown improved survival rates to age 6 months for at least one twin in each of the twin pairs?
- a. Septostomy
  - b. Amnioreduction
  - c. Selective feticide
  - d. Laser ablation of vascular anastomoses
- 39-20. Sonographic evaluation shows twin A with an estimated fetal weight (EFW) of 800 g and twin B with an EFW of 600 g. What is the calculated discordance?
- a. 12%
  - b. 18%
  - c. 25%
  - d. 33%
- 39-21. Factors that affect prognosis of the survivor after death of a co-twin include all **EXCEPT** which of the following?
- a. Chorionicity
  - b. Gestational age at the time of the demise
  - c. Maternal fibrinogen levels at the time of the demise
  - d. Length of time between the demise and delivery of survivor

- 39-22.** Which of the following methods of antepartum fetal surveillance has been shown to improve outcomes in twin pregnancies?
- a. Nonstress test
  - b. Biophysical profile
  - c. Doppler velocimetry of the umbilical artery
  - d. None of the above
- 39-23.** Which intervention has been shown to decrease the rate of preterm birth in twins?
- a. Cerclage
  - b. Tocolytics
  - c. Progesterone
  - d. None of the above
- 39-24.** Which of the following findings predicts a decreased risk of preterm birth in twins?
- a. Closed cervix on digital examination
  - b. Negative fetal fibronectin assessment
  - c. Normal cervical length found during transvaginal sonography
  - d. All of the above
- 39-25.** Encompassing more than 40% of twin pregnancies, which is the most common presentation in labor?
- a. Vertex/vertex
  - b. Vertex/breech
  - c. Breech/vertex
  - d. Vertex/transverse
- 39-26.** Although it can provide excellent uterine relaxation for internal podalic version, which of the following is associated with increased risk of blood loss at delivery?
- a. Epidural block
  - b. Inhaled isoflurane
  - c. Pudendal blockade plus inhaled nitric oxide
  - d. Spinal blockade plus inhaled oxygen

**Chapter 39 Answer Key**

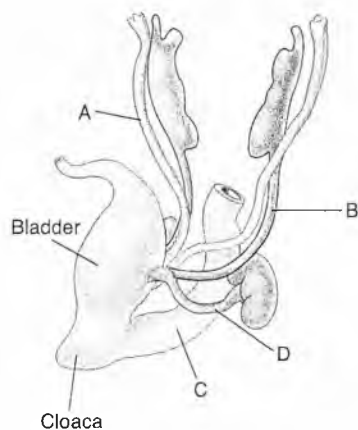
| Question number | Letter answer | Page cited | Header cited                                |
|-----------------|---------------|------------|---------------------------------------------|
| <b>39-1</b>     | <b>d</b>      | p. 859     | Introduction                                |
| <b>39-2</b>     | <b>d</b>      | p. 860     | Fraternal vs Identical Twins                |
| <b>39-3</b>     | <b>b</b>      | p. 861     | Superfetation and Superfecundation          |
| <b>39-4</b>     | <b>a</b>      | p. 864     | Sonographic Evaluation                      |
| <b>39-5</b>     | <b>d</b>      | p. 861     | Figure 39-2                                 |
| <b>39-6</b>     | <b>b</b>      | p. 862     | Frequency of Twins                          |
| <b>39-7</b>     | <b>b</b>      | p. 885     | Selective Reduction or Termination          |
| <b>39-8</b>     | <b>c</b>      | p. 864     | Determination of Chorionicity               |
| <b>39-9</b>     | <b>c</b>      | p. 865     | Diagnosis of Multiple Fetuses               |
| <b>39-10</b>    | <b>c</b>      | p. 866     | Diagnosis of Multiple Fetuses               |
| <b>39-11</b>    | <b>c</b>      | p. 867     | Maternal Adaptation to Multifetal Pregnancy |
| <b>39-12</b>    | <b>b</b>      | p. 868     | Figure 39-8, Birthweight                    |

| Question number | Letter answer | Page cited | Header cited                         |
|-----------------|---------------|------------|--------------------------------------|
| <b>39-13</b>    | <b>c</b>      | p. 868     | Malformations                        |
| <b>39-14</b>    | <b>a</b>      | p. 869     | Preterm Birth                        |
| <b>39-15</b>    | <b>b</b>      | p. 870     | Unique Complications                 |
| <b>39-16</b>    | <b>d</b>      | p. 872     | Vascular Anastomoses Between Fetuses |
| <b>39-17</b>    | <b>b</b>      | p. 872     | Acardiac Twin                        |
| <b>39-18</b>    | <b>b</b>      | p. 874     | Twin-Twin Transfusion Syndrome       |
| <b>39-19</b>    | <b>d</b>      | p. 875     | Therapy and Outcome                  |
| <b>39-20</b>    | <b>c</b>      | p. 876     | Discordant Twins                     |
| <b>39-21</b>    | <b>c</b>      | p. 878     | Death of One Fetus                   |
| <b>39-22</b>    | <b>d</b>      | p. 879     | Antepartum Surveillance              |
| <b>39-23</b>    | <b>d</b>      | p. 880     | Prevention of Preterm Delivery       |
| <b>39-24</b>    | <b>d</b>      | p. 880     | Preterm Labor Prediction             |
| <b>39-25</b>    | <b>a</b>      | p. 881     | Figure 39-25                         |
| <b>39-26</b>    | <b>b</b>      | p. 882     | Analgesia and Anesthesia             |

## CHAPTER 40

# Reproductive Tract Abnormalities

**40-1.** In this image, which of the following ultimately develops into the uterus?



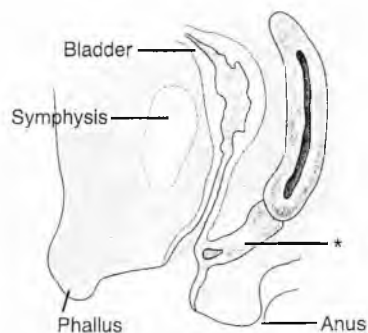
Reproduced, with permission, from Schorge JO, Schaffer JJ, Halvorson LM, et al (eds): Williams Gynecology. New York, McGraw-Hill, 2008, Figure 18-1C.

- a. A
- b. B
- c. C
- d. D

**40-2.** In this same image, which ultimately becomes the ureter?

- a. A
- b. B
- c. C
- d. D

**40-3.** In this sagittal image of the early fetal pelvis, incomplete resorption at the point marked (\*) leads to which anomaly?



Reproduced, with permission, from Schorge JO, Schaffer JJ, Halvorson LM, et al (eds): Williams Gynecology. New York, McGraw-Hill, 2008, Figure 18-4B.

- a. Uterine didelphys
- b. Vaginal adenosis
- c. Gartner duct cyst
- d. Transverse vaginal septum

**40-4.** This vaginal anomaly shown in this photograph is typically associated with a greater risk for which of the following obstetrical complications?



Photograph contributed by Dr. Alison Brooks.

- a. Fetal trisomy
- b. Face presentation
- c. Fourth-degree perineal laceration
- d. None of the above

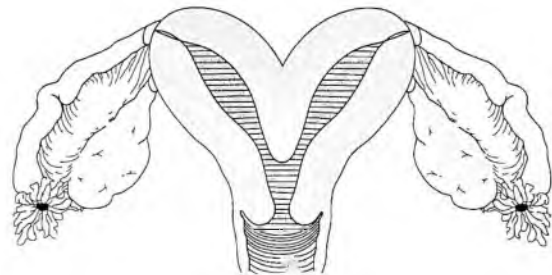
- 40-5. In most instances, the anomaly in Figure 40-4 should prompt which of the following management plans during labor?
- Observation
  - Incision of defect
  - Cesarean delivery
  - Avoidance of labor augmentation
- 40-6. In diagnosing müllerian anomalies, which of the following tools is the most accurate?
- Hysterosalpingography
  - Saline infusion sonography
  - Magnetic resonance imaging
  - 2-D transvaginal sonography
- 40-7. Women with müllerian anomalies are at increased risk for all **EXCEPT** which of the following?
- Leukemia
  - Wilms tumor
  - Auditory defects
  - Urinary tract anomalies
- 40-8. With pregnancy, maternal risks are greatest with which of the following anomalies?
- Septate uterus
  - Bicornuate uterus
  - Uterine didelphys
  - Unicornuate uterus with noncommunicating horn

- 40-9. Here is an image taken at the time of cesarean delivery. Although not shown in this picture, two distinct cervixes and an upper vaginal longitudinal septum are also present. This uterine anomaly is termed which of the following?



Reproduced, with permission, from Cunningham FG, Leveno KL, Bloom SL, et al: Williams Obstetrics, 22nd ed. New York, McGraw-Hill, 2006. <http://www.accessmedicine.com>, Figure 5.

- Septate uterus
  - Bicornuate uterus
  - Uterine didelphys
  - Unicornuate uterus
- 40-10. Women diagnosed with the following anomaly are at increased risk of which of the following pregnancy complications?



Reproduced, with permission, from Pritchard JA, MacDonald PC, Gant NF: Abnormalities of the reproductive tract. In Williams Obstetrics, 17th ed. Norwalk, Appleton-Century-Crofts, 1985, Figure 25-2.

- Preterm delivery
- Theca-lutein cysts
- Amnionic band syndrome
- All of the above

- 40-11.** The highest miscarriage rate is associated with which of the following?
- Septate uterus
  - Bicornuate uterus
  - Uterine didelphys
  - Unicornuate uterus with noncommunicating horn
- 40-12.** Women with in utero diethylstilbestrol exposure may be at greater risk of which of the following?
- Vaginal cancer
  - Preterm delivery
  - Ectopic pregnancy
  - All of the above
- 40-13.** A 25-year-old patient presents at term in labor. She has no complaints of pain or fever and states that the vulvar mass shown in this photograph has been present for years. The most appropriate management for delivery includes which of the following?



Photograph contributed by Dr. Jesse McCullough.

- Observation and allow vaginal delivery
- Incision and drainage (I&D), antibiotics, and plan cesarean delivery
- Allow vaginal delivery and plan puerperal vulvar biopsy
- Marsupialization, antibiotics, and plan cesarean delivery

- 40-14.** The patient shown in this photograph presents with pain, fever, and swollen left labia at 37 weeks without labor. The most appropriate management includes which of the following?



Photograph contributed by Dr. William Griffith.

- Vulvar biopsy and induce labor
  - Observation and await natural onset of labor
  - I&D, antibiotics, and plan cesarean delivery
  - I&D, antibiotics, and await natural onset of labor
- 40-15.** This patient presents at term in labor and has no vulvar complaints of pain or fever. The most appropriate management for delivery includes which of the following?



- Antibiotics and plan cesarean delivery
- I&D, antibiotics, and plan cesarean delivery
- Needle aspiration and allow vaginal delivery
- Spence marsupialization and allow vaginal delivery



- 40-16. The patient shown in this photograph presents at term with labor. The most appropriate management includes which of the following?

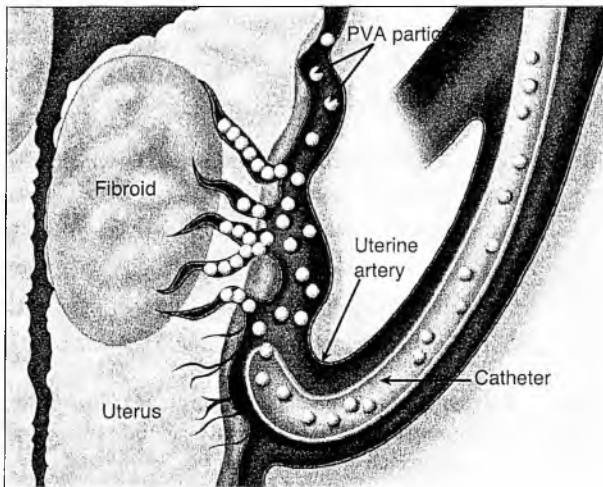


- a. Plan cesarean delivery
  - b. Observation and allow vaginal delivery
  - c. Topical podophyllin and plan cesarean delivery
  - d. Trial of labor and puerperal wide local excision
- 40-17. According to the World Health Organization classification of female genital mutilation, excision of the clitoris and labial majora is defined as which type?
- a. I
  - b. II
  - c. III
  - d. IV
- 40-18. Deinfundibulation may be performed at which of the following times?
- a. Antepartum
  - b. Intrapartum
  - c. Before conception
  - d. All of the above
- 40-19. A woman presents for initiation of prenatal care, and cervical stenosis is identified. This condition is most commonly the result of which of the following?
- a. Congenital anomaly
  - b. Prior cervical conization
  - c. Female genital mutilation
  - d. Trauma from prior delivery
- 40-20. Prior cervical conization increases the risk for which of the following pregnancy complications?
- a. Placenta previa
  - b. Preterm delivery
  - c. Chorioamnionitis
  - d. Face presentation
- 40-21. Patients with an incarcerated uterus classically complain of which of the following?
- a. Vaginal bleeding
  - b. Vaginal discharge
  - c. Fecal incontinence
  - d. Urinary incontinence
- 40-22. An incarcerated uterus is primarily freed by which of the following procedures?
- a. Retention enema
  - b. Flexible sigmoidoscopy
  - c. Digital pressure through the rectum
  - d. Laparoscopic elevation of the round ligaments
- 40-23. In a woman at term and in labor, an elongated vagina passing above the level of the fetal head most likely represents which of the following?
- a. Bandl ring
  - b. Uterine rupture
  - c. Uterine sacculation
  - d. Lower uterine segment leiomyomas
- 40-24. Uterine sacculation is best managed by which of the following?
- a. Cesarean delivery
  - b. External podalic version
  - c. Manual uterine repositioning
  - d. Observation and allow vaginal delivery
- 40-25. Uterine prolapse may best be managed long term during pregnancy by which of the following?
- a. Vaginal pessary
  - b. Abdominal sacrocolpopexy
  - c. Bedrest in Trendelenburg position
  - d. Laparoscopic elevation of round ligaments
- 40-26. Degenerating uterine leiomyomas may be differentiated from appendicitis by which of the following clinical parameters?
- a. Degree of pain
  - b. Degree of fever
  - c. Degree of leukocytosis
  - d. None of the above

**40-27.** Which of the following is the most appropriate treatment of degenerating leiomyomas?

- a. Analgesia
- b. Myomectomy
- c. Antibiotics and analgesia
- d. Anticoagulation with heparin

**40-28.** This procedure prior to pregnancy increases the risk of which of the following in subsequent pregnancies?



- a. Fetal acidosis
- b. Fetal growth restriction
- c. Postpartum hemorrhage
- d. Dyssynchronous uterine contraction pattern

**40-29.** During pregnancy, which of the following typifies the change in leiomyoma size?

- a. Increases
- b. Decreases
- c. No change
- d. All of the above

**40-30.** The effects of leiomyomas on pregnancy are best predicted by which of the two tumor characteristics?

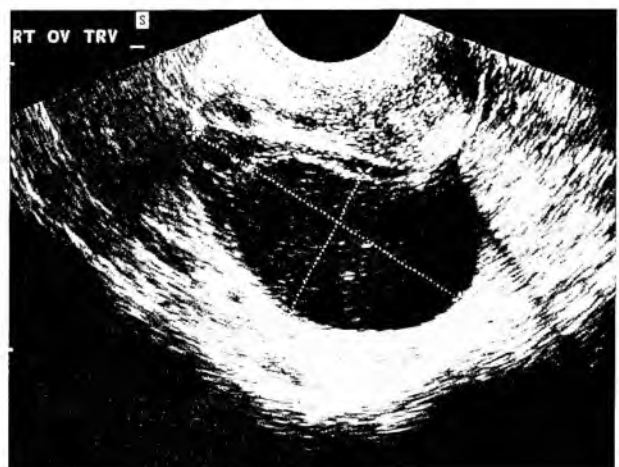
- a. Size and location
- b. Size and vascularity
- c. Location and number
- d. Degree of calcification and number

**40-31.** Taken during cesarean delivery, this image shows a prior myomectomy site. Pregnancy following myomectomy is associated with an increased risk of which of the following?



- a. Uterine rupture
- b. Abnormal fetal lie
- c. Postpartum endometritis
- d. Amnionic fluid embolism

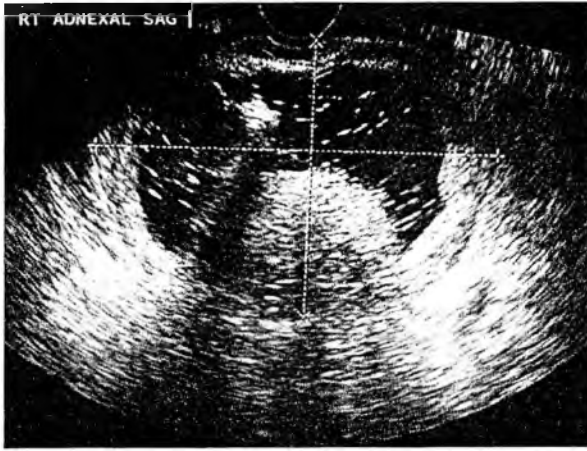
**40-32.** During sonographic evaluation of vaginal bleeding at 8 weeks, a viable intrauterine pregnancy and the following adnexal findings were noted. The most appropriate initial management includes which of the following?



Reproduced, with permission, from Schorge JO, Schaffer JI, Halvorson LM, et al (eds): Williams Gynecology. New York, McGraw-Hill, 2008, Figure 9-11A.

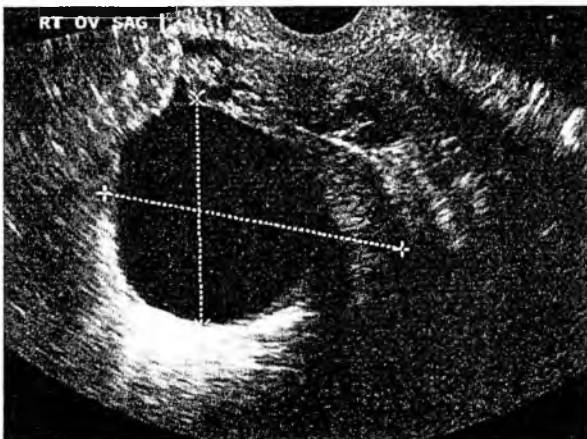
- a. Observation
- b. Salpingectomy
- c. Ovarian cystectomy
- d. Serum CA125 testing

- 40-33. During sonographic evaluation of vaginal bleeding at 12 weeks, a viable intrauterine pregnancy and the following adnexal findings were noted. The most appropriate initial management includes which of the following?



Reproduced, with permission, from Schorge JO, Schaffer JI, Halvorson LM, et al (eds): Williams Gynecology. New York, McGraw-Hill, 2008, Figure 9-14.

- a. Excision
  - b. Observation
  - c. Serum CA125 testing
  - d. Antibiotics and analgesia
- 40-34. During sonographic evaluation of vaginal bleeding at 18 weeks' gestation, a viable intrauterine pregnancy and the following adnexal findings were noted. The most appropriate initial management includes which of the following?



Reproduced, with permission, from Schorge JO, Schaffer JI, Halvorson LM, et al (eds): Williams Gynecology. New York, McGraw-Hill, 2008, Figure 2-1.

- a. Excision
- b. Serum CA125 testing
- c. Serial sonographic surveillance
- d. Excision and progesterone supplementation

- 40-35. Ovarian masses during pregnancy are concerning for which of the following associated potential complications?

- a. Torsion
- b. Placental metastasis
- c. Fetal growth restriction
- d. Venous thromboembolism

- 40-36. This patient presented with a 1-day complaint of severe persistent abdominal pain. Sonographic findings included a 10-cm complex adnexal mass, viable 11-week gestation, and no corpus luteum in the opposite ovary? Appropriate postoperative management includes which of the following?



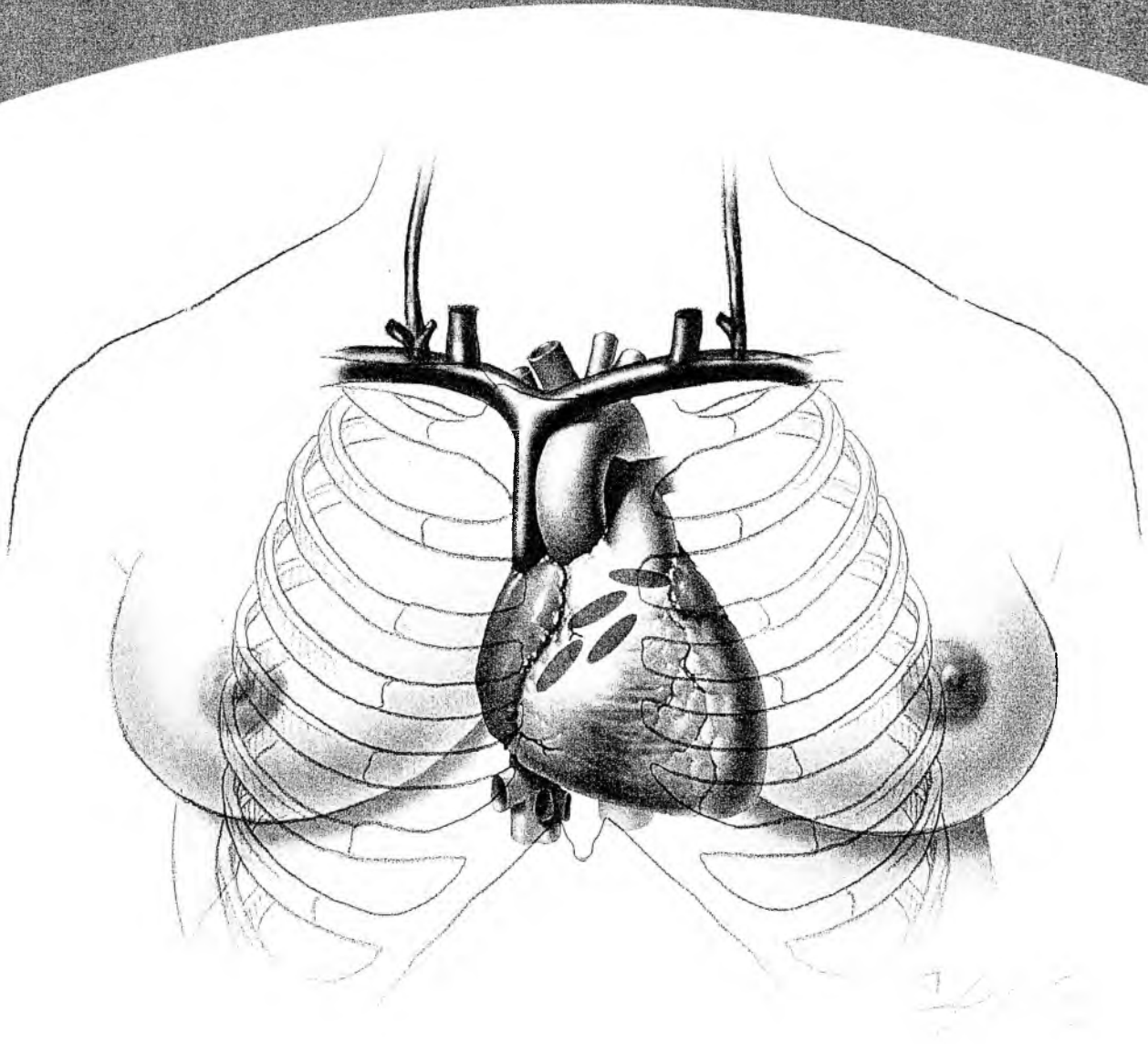
- a. Single intramuscular etonogestrel injection
- b. 17 $\alpha$ -OH intramuscular injections weekly throughout pregnancy
- c. Single intramuscular depot medroxyprogesterone acetate injection
- d. None of the above

## Chapter 40 Answer Key

| Question number | Letter answer | Page cited | Header cited                                    | Question number | Letter answer | Page cited | Header cited                   |
|-----------------|---------------|------------|-------------------------------------------------|-----------------|---------------|------------|--------------------------------|
| 40-1            | a             | p. 891     | Figure 40-1                                     | 40-18           | d             | p. 899     | Pregnancy Complications        |
| 40-2            | d             | p. 891     | Figure 40-1                                     | 40-19           | b             | p. 900     | Cervical Abnormalities         |
| 40-3            | d             | p. 891     | Embryogenesis of the Reproductive Tract         | 40-20           | b             | p. 900     | Cervical Abnormalities         |
| 40-4            | d             | p. 892     | Obstetrical Significance                        | 40-21           | d             | p. 900     | Retroflexion                   |
| 40-5            | a             | p. 892     | Obstetrical Significance                        | 40-22           | c             | p. 900     | Retroflexion                   |
| 40-6            | c             | p. 893     | Diagnosis                                       | 40-23           | c             | p. 900     | Sacculation                    |
| 40-7            | a             | p. 893     | Urological Defects                              | 40-24           | a             | p. 900     | Sacculation                    |
| 40-8            | d             | p. 894     | Unicornuate Uterus (Class II)                   | 40-25           | a             | p. 901     | Uterine Prolapse               |
| 40-9            | c             | p. 895     | Uterine Didelphys (Class III)                   | 40-26           | d             | p. 901     | Uterine Leiomyomas             |
| 40-10           | a             | p. 896     | Bicornuate and Septate Uteri (Classes IV and V) | 40-27           | a             | p. 901     | Uterine Leiomyomas             |
| 40-11           | a             | p. 896     | Bicornuate and Septate Uteri (Classes IV and V) | 40-28           | c             | p. 902     | Uterine Artery Embolization    |
| 40-12           | d             | p. 897     | DES-Induced Reproductive Tract Abnormalities    | 40-29           | d             | p. 902     | Effects of Pregnancy on Myomas |
| 40-13           | a             | p. 898     | Bartholin Gland Lesions                         | 40-30           | a             | p. 903     | Effects of Myomas on Pregnancy |
| 40-14           | d             | p. 898     | Bartholin Gland Lesions                         | 40-31           | a             | p. 904     | Myomectomy                     |
| 40-15           | c             | p. 898     | Urethral and Bladder Lesions                    | 40-32           | a             | p. 905     | Management                     |
| 40-16           | b             | p. 898     | Condyloma Acuminata                             | 40-33           | a             | p. 905     | Management                     |
| 40-17           | b             | p. 898     | Female Genital Mutilation                       | 40-34           | c             | p. 905     | Management                     |
|                 |               |            |                                                 | 40-35           | a             | p. 905     | Management                     |
|                 |               |            |                                                 | 40-36           | d             | p. 906     | Recommendations                |

SECTION 8

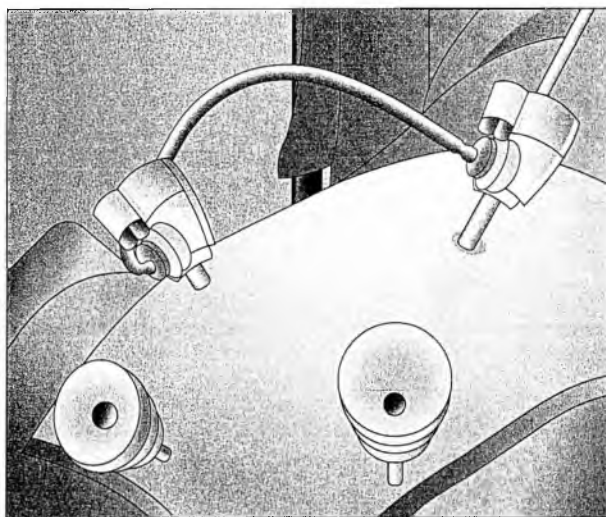
# MEDICAL AND SURGICAL COMPLICATIONS



## CHAPTER 41

# General Considerations and Maternal Evaluation

- 41-1. Accurate generalizations regarding treatment of maternal medical and surgical conditions include which of the following?
- If surgery is required, general anesthesia should be avoided.
  - Medications should be used sparingly to reduce fetal exposure.
  - Surgery should be delayed until fetal lung maturity is present if possible.
  - Withholding therapy should only occur if supported by reasonable justification.
- 41-2. Physiologic changes associated with this procedure include all **EXCEPT** which of the following?



Reproduced, with permission, from Schorge JO, Schaffer JJ, Halvorson LM, et al (eds): Williams Gynecology Online. New York, McGraw-Hill, 2008. <http://www.accessmedicine.com>.

- Decreased cardiac output
  - Increased cerebral blood flow
  - Increased partial pressure of CO<sub>2</sub>
  - Decreased systemic vascular resistance
- 41-3. What is the most common surgery performed in the second trimester?
- Cystectomy
  - Appendectomy
  - Cholecystectomy
  - Exploratory laparotomy
- 41-4. Women undergoing nonobstetrical surgery during pregnancy have an increased risk of all **EXCEPT** which of the following perinatal outcomes?
- Stillbirth
  - Birthweight <2,500 g
  - Preterm birth <37 weeks
  - Neonatal death within 7 days
- 41-5. A woman undergoes general anesthesia for adnexal torsion at 4 to 5 weeks' gestation. Appropriate counseling includes which of the following statements?
- There is no compelling evidence that the anesthetic agents are harmful to her fetus.
  - Following exposure to the anesthetic agents, there is an "all or none" phenomenon with regard to pregnancy loss.
  - There is an increased risk of neural-tube defects in fetuses exposed at this gestational age to the anesthetic agents used.
  - None of the above.
- 41-6. At what intraperitoneal pressure from insufflation do animal studies report decreased uteroplacental blood flow?
- 5 mm Hg
  - 15 mm Hg
  - 20 mm Hg
  - 25 mm Hg
- 41-7. All **EXCEPT** which of the following statements regarding laparoscopy during the first trimester are true?
- It is uncommonly performed in the first trimester.
  - It is associated with an increased risk of preterm delivery.
  - Pregnancy outcomes are no different from women who undergo laparotomy.
  - There is an increased risk of fetal growth restriction compared with women without surgery.

- 41-8. Technical modifications for laparoscopy performed beyond the first trimester include which of the following?
- Use of regional anesthesia
  - Use of open entry techniques
  - Use of an entry point in the right upper quadrant
  - Increasing the pneumoperitoneum to enhance visualization
- 41-9. Which of the following is an example of the stochastic effect from fetal exposure to ionizing radiation?
- Childhood cancer
  - Mental retardation
  - Spontaneous abortion
  - Fetal growth restriction
- 41-10. Examples of ionizing radiation include which of the following?
- Diathermy
  - Microwaves
  - Radiowaves
  - Gamma rays
- 41-11. All **EXCEPT** which of the following may affect the dose of ionizing radiation received by a fetus?
- Fetal lie
  - Age of the equipment
  - Type of study performed
  - Distance of the uterus from the source

- 41-12. A patient is unaware she is pregnant and has this imaging study performed (three views) at 7 weeks' gestation. What is the dose of ionizing radiation received by the uterus?



Reproduced, with permission, from Chen MYM, Pope Jr TL, Ott DJ: Basic Radiology. New York, McGraw-Hill, 2004, Figure 9-3.

- 1–2 mGy
  - 0.8–1.6 mGy
  - <0.001 mGy
  - None of the above
- 41-13. The risk of mental retardation is increased most if the fetus is exposed to ionizing radiation at what gestational age range?
- 4–6 weeks
  - 8–15 weeks
  - 18–24 weeks
  - 28–36 weeks
- 41-14. Which of the following is accurate regarding 50 rad doses of ionizing radiation?
- They are commonly achieved with routine radiological studies.
  - They are associated with increased risk of neural-tube defects.
  - They cause mental retardation at any point during the first trimester.
  - They are not associated with mental retardation if the fetus is beyond 25 weeks' gestation at the time of the exposure.
- 41-15. What is the annual number of women in the United States who undergo cancer therapy while pregnant?
- +00
  - 1,000
  - 4,000
  - 14,000



**41-16.** Doses of ionizing radiation are expressed in gray (Gy). One gray is equivalent to which of the following?

- a. 1 rad
- b. 10 rad
- c. 100 rad
- d. 1 millirad

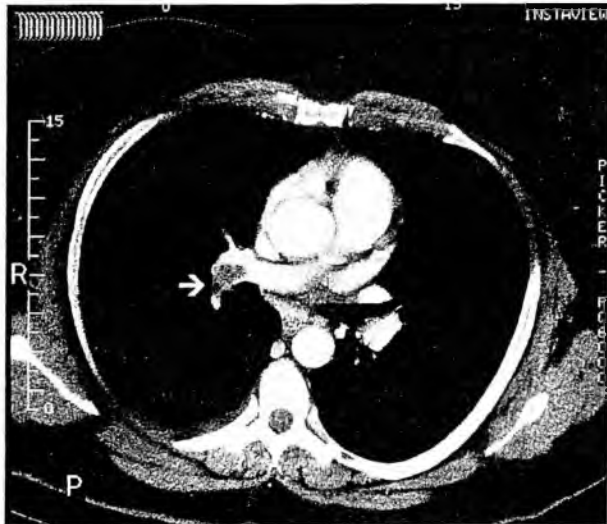
**41-17.** Fetal indications for radiography include which of the following?

- a. Diagnosis of anencephaly
- b. Confirmation of twin pregnancy
- c. Pelvimetry for breech presentation
- d. Evaluation of suspected short rib polydactyly syndrome

**41-18.** The highest exposure to radiation during computed tomography (CT) occurs during evaluation in which of the following protocols?

- a. Eclampsia
- b. Urolithiasis
- c. Appendicitis
- d. Pulmonary embolus

**41-19.** Which of the following statements are true regarding this imaging study shown below?



Contributed by Dr. Michael Landay.

- a. Dosimetry decreases throughout pregnancy.
- b. Study accuracy has improved with faster acquisition times.
- c. The exposure to ionizing radiation is much greater than that with ventilation/perfusion (V/Q) scintigraphy.
- d. The findings are difficult to interpret during pregnancy due to increased pulmonary blood flow.

**41-20.** Factors that impact fetal radiation exposure to radioisotopes include which of the following?

- a. Radionucleotide dose
- b. Rate of placental transfer
- c. Degree of renal clearance
- d. All of the above

**41-21.** Indications for this study during pregnancy include which of the following?



Courtesy of Marcus Chen, MD, Department of Nuclear Medicine, University of Colorado Health Sciences Center. Reproduced, with permission, from Hanley ME, Welsh CH: *Current Diagnosis & Treatment: Pulmonary Medicine*. New York, McGraw-Hill, 2003, Figure 19-1.

- a. Nondiagnostic CT angiography result
- b. Desire for reduced dose of ionizing radiation to the fetus
- c. Initial evaluation of a patient in the third trimester with shortness of breath
- d. None of the above

**41-22.** Which of the following therapeutic options for the treatment of thyroid cancer are contraindicated during pregnancy?

- a. Surgery
- b. Radioiodine
- c. Expectant management
- d. None of the above

**41-23.** Which of the following is a benefit to using magnetic resonance imaging during pregnancy?

- a. There is no fetal exposure to ionizing radiation.
- b. Gadolinium is known to be safe in pregnancy.
- c. There are no contraindications to this type of imaging.
- d. All of the above.



- 41-24.** Which of the following is **NOT** an indication for the imaging modality shown here?



Reproduced, with permission, from Cunningham FG, Leveno KJ, Bloom SL, et al: Williams Obstetrics, 23rd ed. New York, McGraw-Hill, 2010.

- a. Anhydramnios
- b. Maternal BMI >35
- c. Evaluation of fetal chest mass
- d. Suspected fetal central nervous system (CNS) abnormality

- 41-25.** What are the potential tissue effects of sonography at energy outputs greater than those used clinically?

- a. Agitation.
- b. Cavitation.
- c. Vaporization.
- d. There are none.

## Chapter 41 Answer Key

Question number Letter answer Page cited Header cited

|              |          |        |                                                     |
|--------------|----------|--------|-----------------------------------------------------|
| <b>41-1</b>  | <b>d</b> | p. 912 | Introduction                                        |
| <b>41-2</b>  | <b>d</b> | p. 914 | Table 41-2                                          |
| <b>41-3</b>  | <b>b</b> | p. 913 | Effect of Surgery & Anesthesia on Pregnancy Outcome |
| <b>41-4</b>  | <b>a</b> | p. 913 | Table 41-1                                          |
| <b>41-5</b>  | <b>a</b> | p. 913 | Perinatal Outcomes                                  |
| <b>41-6</b>  | <b>b</b> | p. 914 | Animal Studies                                      |
| <b>41-7</b>  | <b>a</b> | p. 913 | Laparoscopic Surgery During Pregnancy               |
| <b>41-8</b>  | <b>b</b> | p. 915 | Technique                                           |
| <b>41-9</b>  | <b>a</b> | p. 915 | Ionizing Radiation                                  |
| <b>41-10</b> | <b>d</b> | p. 915 | Ionizing Radiation                                  |
| <b>41-11</b> | <b>a</b> | p. 915 | X-Ray Dosimetry                                     |
| <b>41-12</b> | <b>d</b> | p. 916 | Table 41-4                                          |

Question number Letter answer Page cited Header cited

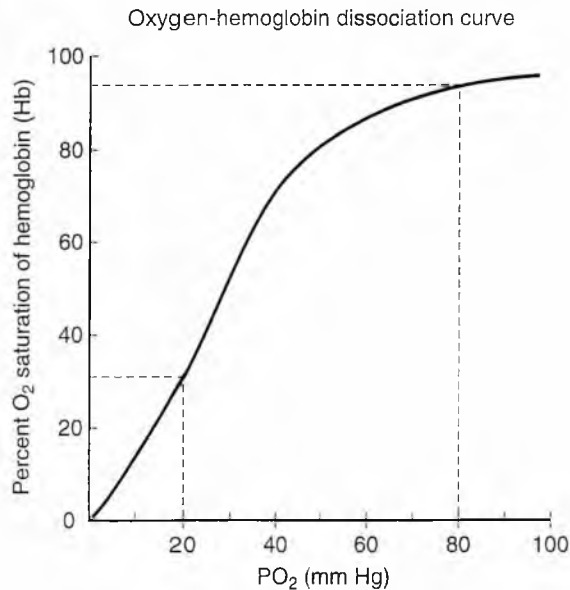
|              |          |        |                             |
|--------------|----------|--------|-----------------------------|
| <b>41-13</b> | <b>b</b> | p. 917 | Human Data                  |
| <b>41-14</b> | <b>d</b> | p. 917 | Human Data                  |
| <b>41-15</b> | <b>c</b> | p. 917 | Therapeutic Radiation       |
| <b>41-16</b> | <b>c</b> | p. 916 | Table 41-3                  |
| <b>41-17</b> | <b>c</b> | p. 918 | Radiographs                 |
| <b>41-18</b> | <b>c</b> | p. 919 | Table 41-6                  |
| <b>41-19</b> | <b>b</b> | p. 919 | Computed Tomography         |
| <b>41-20</b> | <b>d</b> | p. 920 | Nuclear Medicine Studies    |
| <b>41-21</b> | <b>a</b> | p. 920 | Nuclear Medicine Studies    |
| <b>41-22</b> | <b>b</b> | p. 921 | Nuclear Medicine Studies    |
| <b>41-23</b> | <b>a</b> | p. 921 | Safety (Magnetic Resonance) |
| <b>41-24</b> | <b>b</b> | p. 923 | Fetal Indication            |
| <b>41-25</b> | <b>b</b> | p. 921 | Safety (Sonography)         |

## CHAPTER 42

### Critical Care and Trauma

- 42-1. Which is true of obstetrical patients needing intensive care?
- Their mortality rate approaches 10%.
  - Most are postpartum.
  - They are usually experiencing hemorrhage.
  - All of the above.
- 42-2. The most common complication in pregnancy that leads to an intensive care unit (ICU) or obstetrical intensive care admission is which of the following?
- Sepsis
  - Hemorrhage
  - Pulmonary embolus
  - Hypertensive disease
- 42-3. Cardiac output during pregnancy is roughly increased by what percent?
- 25%
  - 35%
  - 45%
  - 55%
- 42-4. During pregnancy, which of the following physiological changes normally occur?
- Colloid oncotic pressure increases
  - Systemic vascular resistance decreases
  - Pulmonary vascular resistance increases
  - Left ventricular stroke work index decreases
- 42-5. In the obstetric setting, which of the following is true regarding pulmonary artery catheter monitoring?
- It has been shown to improve survival rates.
  - It is essential for the care of severe preeclampsics.
  - It is required in patients with low injury severity scores.
  - It is seldom necessary in critically ill obstetrical patients.
- 42-6. Which of the following is the **LEAST** likely condition to predispose to noncardiogenic pulmonary edema in the obstetrical patient?
- Sepsis syndrome
  - Acute hemorrhage
  - Magnesium sulfate administration
  - Preeclampsia-related endothelial activation
- 42-7. In pregnancy, hydrostatic cardiogenic edema can be caused by which of the following?
- Preeclampsia
  - Chronic hypertension
  - Obesity with left ventricular hypertrophy
  - All of the above
- 42-8. To diagnose acute respiratory distress syndrome (ARDS), all **EXCEPT** which of the following should be present?
- Oxygen desaturation
  - Evidence of heart failure
  - $\text{PaO}_2:\text{FiO}_2$  ratio is  $<200$
  - Chest radiograph with pulmonary infiltrates
- 42-9. What is the best way to increase oxygen delivery to the tissues in a pregnant patient with ARDS secondary to hemorrhage?
- Transfuse blood
  - Deliver the fetus
  - Increase arterial  $\text{PO}_2$  to 200 mm Hg
  - All of the above have a similar effect on oxygen delivery

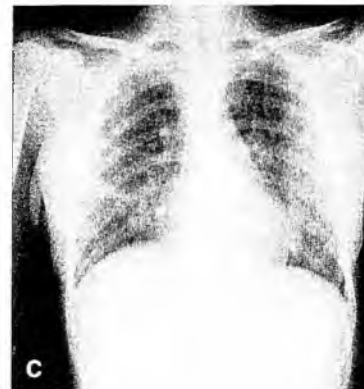
- 42-10.** Rightward shift of the curve shown here may be caused by which of the following?



Reproduced, with permission, from Brunicaudi FC, Anderson DK, Billiar TR, et al: Schwartz's Principles of Surgery, 9th ed. New York, McGraw-Hill, 2010, Figure 47-12.

- a. Fever
  - b. Hypocapnia
  - c. Metabolic alkalosis
  - d. Decreased 2,3-diphosphoglycerate (2,3-DPG)
- 42-11.** What is the approximate mortality rate for obstetrical patients requiring mechanical ventilation in an intensive care setting?
- a. 5%
  - b. 10%
  - c. 20%
  - d. 40%

- 42-12.** In this pregnant patient with ARDS, the intervention that most likely led to the changes seen below was which of the following?



Reproduced, with permission, from Cunningham FG, Leveno KJ, Bloom SL, et al: Williams Obstetrics, 23rd ed. New York, McGraw-Hill, 2010.

- a. Surfactant therapy
- b. PEEP 5–15 mm Hg
- c. Nitric oxide administration
- d. Methylprednisolone therapy

- 42-13. All **EXCEPT** which of the following statements are true regarding the endotoxins associated with sepsis syndrome?
- They are released by gram negative bacteria.
  - Escherichia coli* and *Klebsiella* species have potent endotoxins.
  - They are lipopolysaccharides released when bacterial cell walls lyse.
  - Toxic shock syndrome (TSS) toxin is an endotoxin that can cause extensive tissue necrosis and gangrene.
- 42-14. Which of the following are mediators of sepsis syndrome?
- Interleukin-6 (IL-6)
  - Bradykinin
  - CD4<sup>+</sup> T cells
  - All of the above
- 42-15. Which of the following constitutes progression from the warm phase of septic shock to the cold phase?
- Oliguria
  - Leukocytosis
  - Hypovolemia
  - Pulmonary hypertension
- 42-16. Which of the following interventions is the **LEAST** likely to be beneficial in the treatment of early sepsis?
- Albumin administration
  - Vasoactive drug treatment
  - Broad-spectrum antimicrobials
  - Aggressive hydration with crystalloid
- 42-17. With septic abortion, despite other therapies, infection is unlikely to resolve without which of the following interventions?
- Hysterectomy
  - Aggressive hydration
  - Evacuation of uterine contents
  - Uterotonin administration
- 42-18. Which of the following would be appropriate for the evaluation of a pregnant patient with pyelonephritis and continuing sepsis despite adequate antimicrobial administration?
- Renal sonography
  - Computed tomography
  - One-shot intravenous pyelogram
  - All of the above

- 42-19. A 24-year-old G1P1 presents 1 week postpartum with sepsis. Uterine findings at the time of laparotomy are shown in this image. Which of the following interventions will most likely lead to survival of this patient?



Reproduced, with permission, from Cunningham FG, Leveno KJ, Bloom SL, et al: Williams Obstetrics, 23rd ed. New York, McGraw-Hill, 2010.

- Hysterectomy
  - Debridement of necrotic tissue
  - Hysterotomy and evacuation of products of conception
  - Empirical treatment for group A  $\beta$ -hemolytic streptococcus
- 42-20. Which of the following may be useful in the setting of a septic patient with an APACHE II score >25?
- Antithrombin III
  - Nitric oxide synthase inhibitors
  - Tissue factor pathway inhibitors
  - Recombinant activated protein C
- 42-21. An appropriate prophylaxis against *Chlamydia trachomatis* for a sexual assault victim includes which of the following?
- Cefixime, 400 mg oral single dose
  - Azithromycin, 1 g oral single dose
  - Erythromycin, 500 mg BID orally for 7 days
  - Metronidazole gel, 500 mg BID vaginally for 7 days
- 42-22. Which of the following is the major risk factor for intimate partner homicide?
- Illicit drugs use
  - Unwanted pregnancy
  - Prior domestic violence
  - Low socioeconomic status

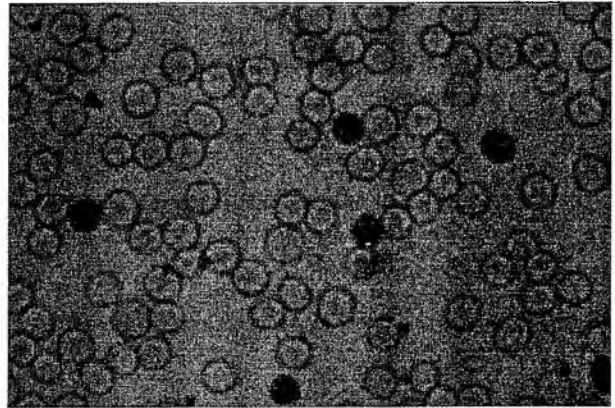
- 42-23.** Following blunt trauma in a motor vehicle accident during pregnancy, the complication seen in this image is unlikely in which of the following settings?



Reproduced, with permission, from Cunningham FG, Leveno KJ, Bloom SL, et al: Williams Obstetrics, 23rd ed. New York, McGraw-Hill, 2010.

- a. The car speed was >30 mph.
- b. The fetal heart rate tracing is nonreassuring.
- c. The intrauterine pressure generated by the trauma was greater than 500 mm Hg.
- d. The patient is having contractions less frequently than every 30 minutes during the first 4 hours after the accident.

- 42-24.** The Kleihauer–Betke stain shown in this image is most consistent with which of the following



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- a. Fetal hemoglobinopathy
  - b. Fetomaternal hemorrhage
  - c. Nontraumatic placental abruption
  - d. Maternal anemia secondary to hemorrhage
- 42-25.** For adequate resuscitation of a pregnant woman in cardiac arrest, which of the following is necessary?
- a. Deliver her nonviable fetus
  - b. Place her in left lateral decubitus
  - c. Begin cardiopulmonary resuscitation (CPR) within 5 minutes of arrest
  - d. All of the above

**Chapter 42 Answer Key**

| Question number | Letter answer | Page cited | Header cited                                          | Question number | Letter answer | Page cited | Header cited                                 |
|-----------------|---------------|------------|-------------------------------------------------------|-----------------|---------------|------------|----------------------------------------------|
| 42-1            | b             | p. 927     | Table 42-1                                            | 42-14           | d             | p. 933     | Sepsis Syndrome/<br>Etiopathogenesis         |
| 42-2            | d             | p. 927     | Table 42-1                                            | 42-15           | a             | p. 933     | Hemodynamic Changes with<br>Sepsis           |
| 42-3            | c             | p. 928     | Table 42-4                                            | 42-16           | a             | p. 934     | Management                                   |
| 42-4            | b             | p. 928     | Table 42-4                                            | 42-17           | c             | p. 934     | Surgical Treatment                           |
| 42-5            | d             | p. 928     | Pulmonary Artery Catheter                             | 42-18           | d             | p. 934     | Surgical Treatment                           |
| 42-6            | c             | p. 929     | Noncardiogenic Increased<br>Permeability Edema        | 42-19           | a             | p. 934     | Surgical Treatment                           |
| 42-7            | d             | p. 929     | Cardiogenic Cardiostatic Edema                        | 42-20           | d             | p. 936     | Adjunctive Therapy                           |
| 42-8            | b             | p. 930     | Acute Respiratory Distress<br>Syndrome                | 42-21           | b             | p. 937     | Table 42-8                                   |
| 42-9            | a             | p. 931     | Management                                            | 42-22           | c             | p. 936     | Physical Abuse-Intimate<br>Partner Violence  |
| 42-10           | a             | p. 931     | Oxyhemoglobin Dissociation<br>Curve                   | 42-23           | d             | p. 938     | Traumatic Placental Abruption                |
| 42-11           | c             | p. 932     | Mechanical Ventilation                                | 42-24           | b             | p. 939     | Fetal-Maternal Hemorrhage<br>and Figure 42-9 |
| 42-12           | b             | p. 932     | Positive End Expiratory<br>Pressure and Other Therapy | 42-25           | b             | p. 942     | Cardiopulmonary<br>Resuscitation             |
| 42-13           | d             | p. 933     | Sepsis Syndrome/<br>Etiopathogenesis                  |                 |               |            |                                              |

## CHAPTER 43

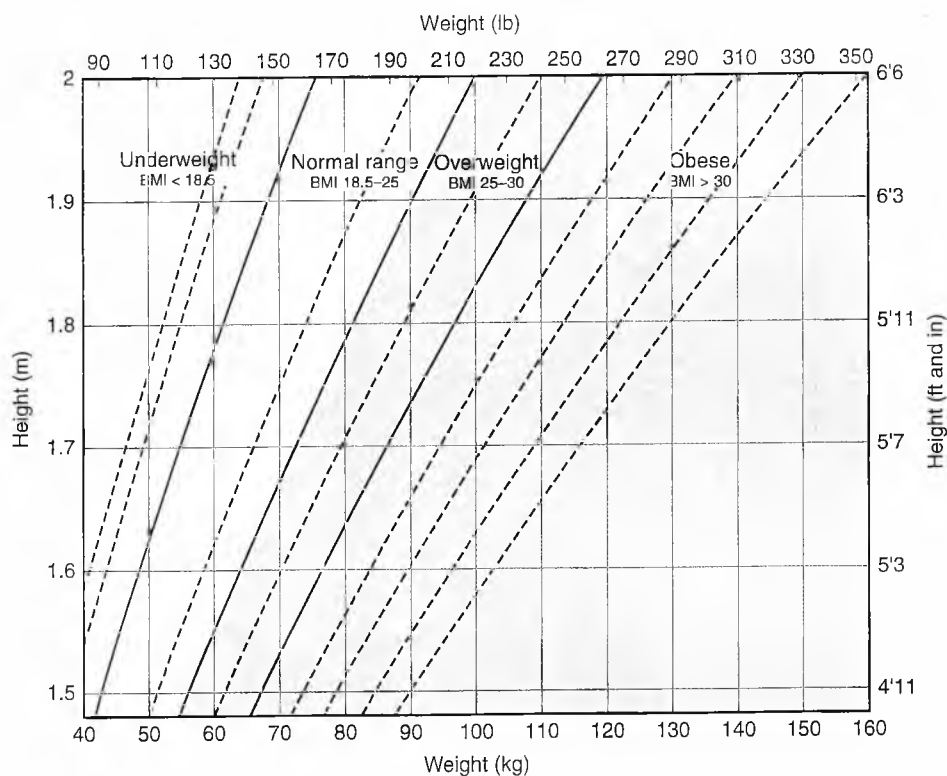
# Obesity

**43-1.** A 24-year-old G1P0 presents for prenatal care. She has a body mass index (BMI) of 29. According to the National Heart, Lung, and Blood Institute, this classifies the patient as which of the following?

- a. Normal weight
- b. Overweight
- c. Obese, class I
- d. Obese, class II

**43-3.** A 26-year-old G2P0 presents for prenatal care. She is 5 ft 3 in tall, and she weighs 164 lb. Using the chart provided below, what is the patient's BMI?

- a. Less than 18.5
- b. 18.5–25
- c. 25–30
- d. Greater than 30



Reproduced, with permission, from Cunningham FG, Leveno KJ, Bloom SL, et al: Williams Obstetrics, 23rd ed. New York, McGraw-Hill, 2010.

**43-2.** The calculation for BMI is which of the following?

- a. Weight in pounds divided by height in inches, then multiplied by 10
- b. Weight in kilograms multiplied by height in square inches
- c. Weight in kilograms divided by height in square meters
- d. Weight in pounds multiplied by age and divided by height in feet

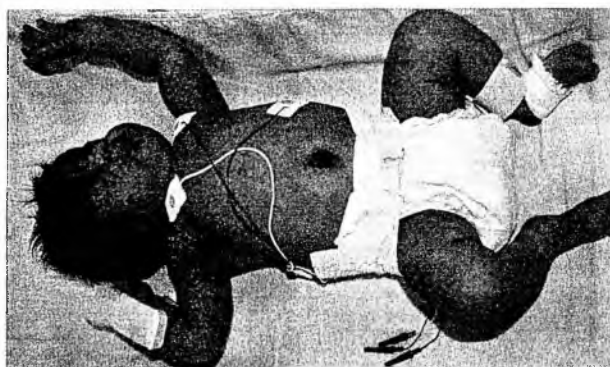
**43-4.** Which of the following is **NOT** part of the metabolic syndrome?

- a. Type 2 diabetes mellitus
- b. Dyslipidemia
- c. Asthma
- d. Hypertension



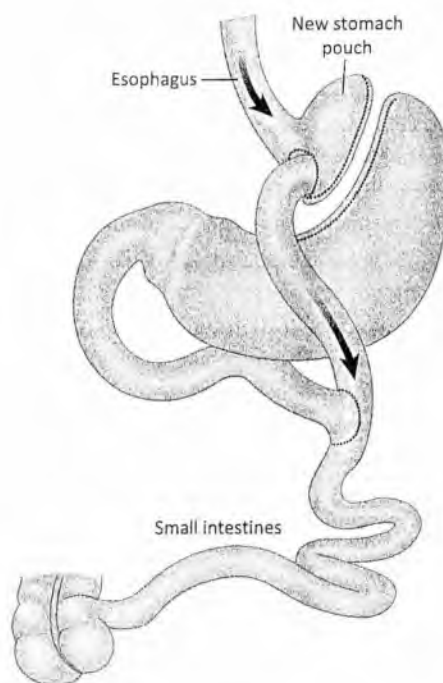
- 43-5.** The prevalence of obesity (BMI >30) is highest among which race/ethnicity in the nonpregnant U.S. population aged 20 to 39 years?
- White, non-Hispanic
  - Mexican American
  - Non-Hispanic black
  - Equal across all races/ethnicities
- 43-6.** Which of the following is a long-term complication of obesity?
- Sleep apnea
  - Carpal tunnel syndrome
  - Deep-vein thrombosis
  - All of the above
- 43-7.** Which of the following is the likely cause of subfertility in obese women?
- Hyperlipidemia
  - Atherosclerosis
  - Increased blood volume
  - Hyperinsulinemia
- 43-8.** A 25-year-old nulligravida and her husband present to you for preconceptional counseling. They are anxious to start a family and have been trying for 3 months without success. The patient and her husband report no significant past medical history, however, her BMI is 38 kg/m<sup>2</sup>. Which of the following are appropriate counseling points?
- She should become pregnant with relative ease.
  - She is not at increased risk for first-trimester miscarriage.
  - Marked obesity is unequivocally hazardous to a woman and her fetus, and she should focus on weight loss before conception.
  - Obese women typically have healthy babies, and they don't require additional health care services.
- 43-9.** Which of the following describes the prevalence of obesity over the past 20 years among pregnant women?
- Decreased
  - Increased
  - Unchanged
  - Increased for the first decade and then decreased
- 43-10.** A 36-year-old G1P0 presents for prenatal care. She has a BMI of 27. Using the Institute of Medicine recommendations, how many pounds should this patient gain during her pregnancy?
- 28–40
  - 25–35
  - 11–20
  - 15–25
- 43-11.** Which of the following statements regarding weight gain in pregnancy is true?
- Three-fourths of women gain the appropriate amount of weight.
  - Overweight women are more likely to gain excessive weight in pregnancy compared with normal weight women.
  - Gaining an appropriate amount of weight during pregnancy means you will not be heavier after pregnancy than you were before.
  - Obese women should gain more weight than underweight women.
- 43-12.** The rates of which of the following pregnancy complications are most increased in obese women compared with women with a normal BMI?
- Preeclampsia
  - Gestational diabetes
  - Stillbirth
  - Postpartum hemorrhage
- 43-13.** Obesity increases the risk of which of the following obstetrical outcomes?
- Failed vaginal delivery after prior cesarean delivery
  - Gestational diabetes
  - Postcesarean wound infection
  - All of the above
- 43-14.** Which of the following statements regarding obese women is true?
- They are more likely to breast feed than normal-weight women.
  - They are less likely to have postpartum depression than normal-weight women.
  - Those attempting a vaginal birth after a prior cesarean delivery (VBAC) have lower success rates than normal-weight women.
  - They have a lower incidence of preeclampsia.
- 43-15.** Postpartum, which of the following are correct counseling points for an obese woman?
- Hormonal contraception may not be as effective.
  - She has an increased chance of having an obese child.
  - She is more likely to have weight retention 1 year after delivery than a normal-weight woman.
  - All of the above.

- 43-16.** Which of the following describes the risk of late stillbirth in obese women?
- Increased
  - Decreased
  - Unchanged
  - Unknown if stillbirth rates are affected by maternal BMI
- 43-17.** Which of the following fetal anomalies has been associated with maternal obesity?
- Omphalocele
  - Heart defects
  - Neural-tube defects
  - All of the above
- 43-18.** A 27-year-old multipara delivers the preterm baby pictured here. The patient's care was complicated by both diabetes mellitus and long-standing obesity. Which of the following has the strongest influence on newborn weight and macrosomia?



- Prepregnancy BMI
  - Weight gained during pregnancy
  - Pregestational diabetes
  - Gestational diabetes
- 43-19.** You are supervising the care of an obese pregnant woman. Which of the following counseling points is correct?
- She should try and lose weight during the pregnancy to decrease the chance of complications.
  - She should try and stay the same weight throughout the pregnancy because the fetus will preferentially receive nutrients.
  - It may be more difficult to detect fetal anomalies sonographically.
  - Obese women are less likely to have a baby with a neural-tube defect because they ingest so much folic acid.

- 43-20.** A 19-year-old G1P0 at 32 weeks' gestation presents for her routine prenatal care visit. The patient is extremely obese with a BMI of  $40 \text{ kg/m}^2$ . Her fundal height is 40 cm. Which of the following is the best next management step?
- Have the patient empty her bladder again and remeasure the fundal height
  - Nonstress test
  - Perform sonography to assess growth
  - Compare this fundal height measurement with those previously obtained to see if they are continuing to increase
- 43-21.** Which of the following surgical procedures is no longer used for the treatment of morbid obesity?
- Vertical gastropasty
  - Upper gastrojejunostomy bypass
  - Gastric banding
  - Roux-en-Y gastric bypass
- 43-22.** Which of the following surgical procedures is illustrated in this image?



- Vertical gastropasty
- Upper gastrojejunostomy bypass
- Gastric banding
- Roux-en-Y gastric bypass

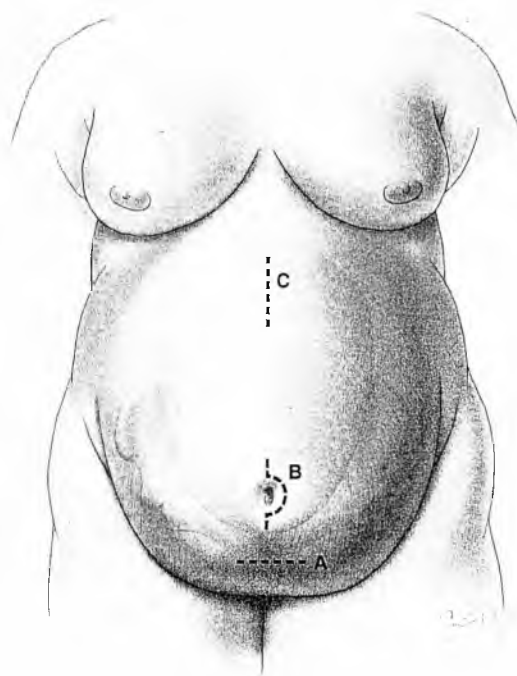
**43-23.** Which of the following is the most effective bariatric procedure currently in use?

- a. Vertical gastropasty
- b. Upper gastrojejunostomy bypass
- c. Gastric banding
- d. Roux-en-Y gastric bypass

**43-24.** A 36-year-old G1P0 presents for prenatal care. She underwent gastric banding 2 years ago that resulted in a 100 lb weight loss. Which of the following are appropriate counseling points?

- a. She may have vitamin deficiencies.
- b. The band may need to be adjusted during the pregnancy.
- c. The weight loss will likely decrease her chances of pregnancy complications.
- d. All of the above.

**43-25.** You are caring for a 35-year-old G3P2 at term. The baby is breech, and you plan for a cesarean delivery. The patient is morbidly obese with a significant panniculus. Based on the figure here, which of the following sites is the best location for her skin incision?



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- a. A, underneath the panniculus
- b. B, periumbilical
- c. C, supraumbilical
- d. None of the above

## Chapter 43 Answer Key

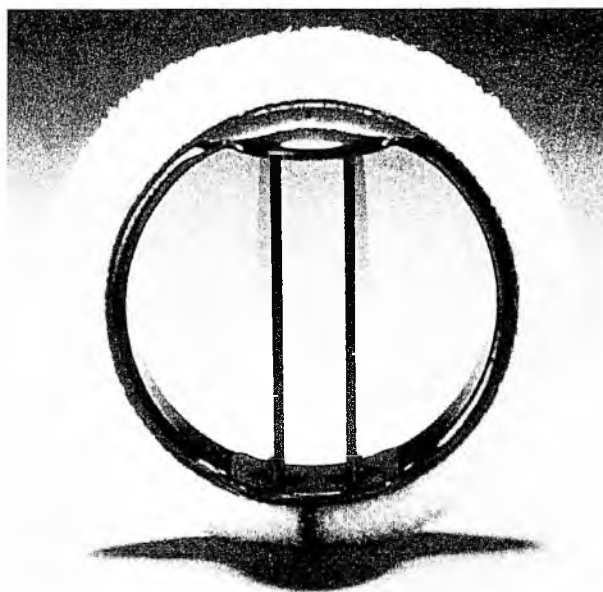
| Question number | Letter answer | Page cited | Header cited                                |
|-----------------|---------------|------------|---------------------------------------------|
| 43-1            | b             | p. 946     | Definitions                                 |
| 43-2            | c             | p. 946     | Definitions                                 |
| 43-3            | c             | p. 947     | Figure 43-1                                 |
| 43-4            | c             | p. 947     | Definitions/Prevalence                      |
| 43-5            | c             | p. 948     | Figure 43-3                                 |
| 43-6            | d             | p. 948     | Table 43-2                                  |
| 43-7            | d             | p. 948     | Table 43-2                                  |
| 43-8            | c             | p. 949     | Pregnancy and Obesity                       |
| 43-9            | b             | p. 949     | Figure 43-5                                 |
| 43-10           | d             | p. 950     | 950, Table 43-3                             |
| 43-11           | b             | p. 950     | Maternal Weight Gain and Energy Requirement |
| 43-12           | b             | p. 950     | Table 43-4                                  |
| 43-13           | d             | p. 951     | Figure 43-6                                 |
| 43-14           | c             | p. 951     | Maternal Morbidity                          |

| Question number | Letter answer | Page cited | Header cited                                        |
|-----------------|---------------|------------|-----------------------------------------------------|
| 43-15           | d             | p. 951     | Contraception                                       |
| 43-16           | a             | p. 951     | Perinatal Mortality                                 |
| 43-17           | d             | p. 952     | Perinatal Morbidity                                 |
| 43-18           | a             | p. 952     | Perinatal Morbidity                                 |
| 43-19           | c             | p. 953     | Morbidity in Children Born to Obese Women           |
| 43-20           | c             | p. 953     | Management                                          |
| 43-21           | b             | p. 953     | Pregnancy Following Surgical Procedures for Obesity |
| 43-22           | d             | p. 954     | Pregnancy Following Surgical Procedures for Obesity |
| 43-23           | d             | p. 954     | Pregnancy Following Surgical Procedures for Obesity |
| 43-24           | d             | p. 954     | Pregnancy Following Surgical Procedures for Obesity |
| 43-25           | b             | p. 954     | Figure 43-7                                         |

## CHAPTER 44

# Cardiovascular Disease

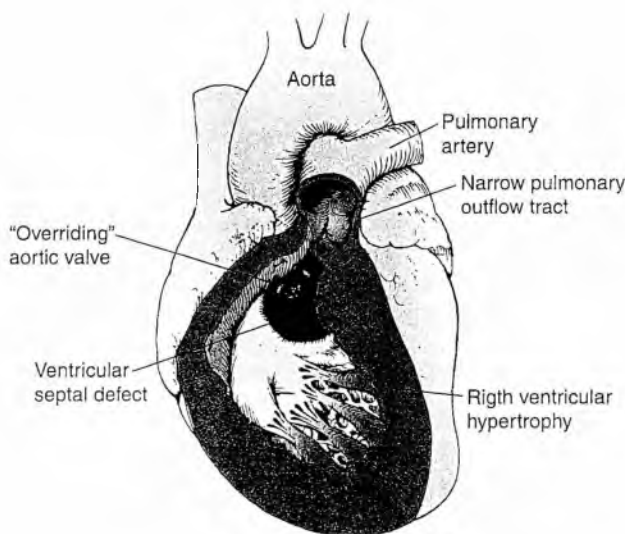
- 44-1.** All **EXCEPT** which of the following are increased by at least 15% in normal pregnancy?
- Heart rate
  - Cardiac output
  - Mean arterial pressure
  - Left ventricular stroke work index
- 44-2.** Which of the following is never a normal finding in pregnancy?
- Dyspnea
  - Systolic murmur
  - Diastolic murmur
  - Exercise intolerance
- 44-3.** All **EXCEPT** which of the following are normal variations from the nonpregnant state expected in obstetrical patients?
- Electrocardiogram (EKG) showing a 15% left axis deviation
  - Chest radiograph showing a larger cardiac silhouette
  - Electrocardiogram (EKG) showing supraventricular tachycardia
  - Echocardiogram showing tricuspid regurgitation
- 44-4.** A pregnant woman with preexisting cardiac disease is comfortable at rest, but cannot stand up to brush her teeth without experiencing chest pain. Her New York Heart Association (NYHA) classification is which of the following?
- I
  - II
  - III
  - IV
- 44-5.** Which of the following accurately describes the risk of congenital heart disease, excluding Marfan syndrome, in the offspring of an affected parent?
- It cannot be modified.
  - It is greater if the mother is affected.
  - It is generally higher for left-sided lesions.
  - All of the above.
- 44-6.** All **EXCEPT** which of the following are normal physiologic changes of pregnancy?
- Hypercoagulability
  - Intracardiac shunting
  - Decrease in systemic vascular resistance
  - Increase in blood volume of approximately 50%
- 44-7.** Which of the following is true regarding antepartum and intrapartum care of patients with cardiovascular disease?
- Vaginal delivery is preferred.
  - Spinal blockade is the recommended anesthetic.
  - These patients should avoid live-virus vaccines.
  - Invasive monitoring with pulmonary artery catheter is required.
- 44-8.** The maternal mortality rate during pregnancy in patients with this cardiac device approximates which of the following?



Reproduced, with permission, from Fuster V, O'Rourke RA, Walsh RA, et al: *Hurst's the Heart*, 12th ed. New York, McGraw-Hill, 2008, Figure 79-2a.

- 0.5%
- 3%
- 7%
- 10%

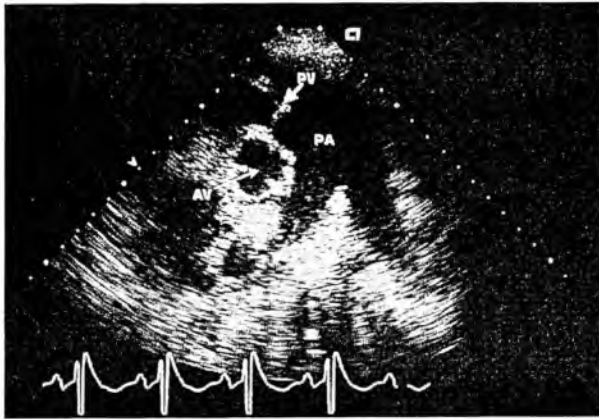
- 44-9.** To prevent thromboembolism involving the prosthesis during pregnancy in patients with mechanical valves, all **EXCEPT** which of the following regimens are acceptable?
- Warfarin
  - Adjusted-dose unfractionated heparin
  - Low-dose unfractionated heparin
  - Adjusted dose low-molecular-weight heparin
- 44-10.** In the heparin anticoagulated parturient, which of the following antidotes can be given if significant hemorrhage is encountered during labor?
- Naloxone
  - Acetylcysteine
  - Protamine sulfate
  - Calcium gluconate
- 44-11.** Valve replacement during pregnancy is associated with which of the following complications?
- Fetal death rate of 10%
  - Maternal mortality rate of 5–8%
  - Minimal risk of miscarriage
  - Significantly elevated risk of heart failure
- 44-12.** Regarding percutaneous transcatheter balloon dilatation of the mitral valve in pregnancy, the following are true, **EXCEPT**:
- Perinatal mortality rate is 33%.
  - It is preferred over open surgical repair.
  - Balloon dilatation is over 90% successful.
  - The average increase in mitral valve area is 50% in some studies.
- 44-13.** Patients who embark on a pregnancy after heart transplantation can expect which of the following?
- Minimal risk of rejection
  - Hypertension to be their most common complication
  - Maternal death rate comparable with that of non-pregnant transplant recipients
  - All of the above
- 44-14.** Which of the following statements is accurate regarding most cases of mitral valve stenosis?
- They are caused by rheumatic endocarditis.
  - They are due to a congenitally bicuspid valve.
  - They are generally free of pregnancy complications.
  - They lead to left ventricular hypertrophy and dilatation.
- 44-15.** Acute mitral insufficiency may present secondary to which of the following?
- Rheumatic fever
  - Calcified mitral annulus
  - Dilated cardiomyopathy
  - Papillary muscle infarction
- 44-16.** All **EXCEPT** which of the following statements are true regarding aortic stenosis in pregnancy?
- The most common cause in the United States is a congenitally bicuspid valve.
  - Narcotic epidural anesthesia is preferred for labor pain.
  - Valve gradients of 50 mm Hg have the greatest risk of death.
  - Laboring women should be managed favoring fluid overload rather than hypovolemia, to avoid hypotension.
- 44-17.** Paradoxical embolism may occur in patients with which of the following?
- Atrial septal defects
  - Patent ductus arteriosus
  - Eisenmenger syndrome
  - Ventricular septal defects
- 44-18.** This image illustrates a heart with which of the following?



Reproduced, with permission, from Crawford MH: Current Diagnosis & Treatment: Cardiology 3rd ed. New York, McGraw-Hill, 2009, Figure 28-23.

- Ebstein anomaly
- Tetralogy of Fallot
- Eisenmenger syndrome
- Arterioventricular septal defect

- 44-19. This image shows a short-axis echocardiographic view of the heart in a female with Eisenmenger syndrome. The most common underlying cardiac defects that may lead to this syndrome include all **EXCEPT** which of the following?



Reproduced, with permission, from Crawford MH: *Current Diagnosis & Treatment: Cardiology* 3rd ed. New York, McGraw-Hill, 2009, Figure 28-26.

- a. Atrial septal defects
- b. Ventricular septal defects
- c. Patent ductus arteriosus
- d. Valvular heart disease

- 44-20. Pregnant patients with pulmonary hypertension have the highest maternal mortality rate if they are in which World Health Organization (WHO) class of pulmonary hypertension?

- a. I
- b. II
- c. III
- d. IV or V

- 44-21. The most common cause of heart failure during pregnancy and the puerperium is which of the following?

- a. Obesity
- b. Viral myocarditis
- c. Valvular heart disease
- d. Chronic hypertension with severe preeclampsia

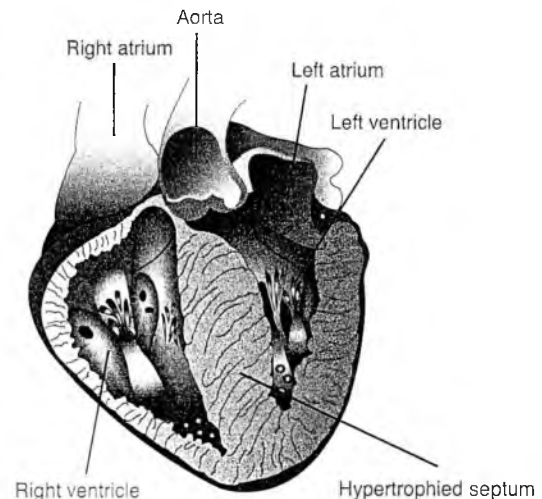
- 44-22. A pregnant patient presents in heart failure without an identifiable underlying cause. Which of the following findings in this chest radiograph is helpful to reach the diagnosis of peripartum cardiomyopathy?



Reproduced, with permission, from Cunningham FG, Pritchard JA, Hankins GDV, et al: *Peripartum heart failure: idiopathic cardiomyopathy or compounding cardiovascular events?* *Obstet Gynecol* 1986;67:157.

- a. Cardiomegaly
- b. Pleural effusions
- c. Pulmonary edema
- d. Perihilar opacifications

- 44-23. What is the mode of inheritance for the nonsporadic cardiac lesion shown in this figure?



Reproduced, with permission, from McPhee SJ, Hammer GD: *Pathophysiology of Disease: An Introduction to Clinical Medicine*, 6th Edition. New York, McGraw-Hill, 2010, Figure 10-23.

- a. Mitochondrial
- b. X-linked recessive
- c. Autosomal recessive
- d. Autosomal dominant

- 44-24. What is the mode of inheritance for idiopathic hypertrophic subaortic stenosis?
- Sporadic
  - X-linked recessive
  - Autosomal recessive
  - Autosomal dominant
- 44-25. Among IV drug users, what is the most common causative organism in infective endocarditis?
- Staphylococcus aureus*
  - Streptococcus viridans*
  - Staphylococcus epidermidis*
  - Enterococcus* species
- 44-26. All EXCEPT which of the following are adequate regimens used in prophylaxis for bacterial endocarditis for the at-risk patient in labor?
- Metronidazole 500 mg IV
  - Cefazolin 1 g IV
  - Ampicillin 2 g IV
  - Clindamycin 600 mg IV
- 44-27. Patients with QT-interval prolongation are at risk of developing which arrhythmia?
- Atrial fibrillation
  - Torsades de pointes
  - Wolff-Parkinson-White
  - Paroxysmal supraventricular tachycardia
- 44-28. What is the threshold of aortic root size that determines whether a Marfan syndrome patient is at higher risk of dissection during pregnancy?
- 20 mm
  - 30 mm
  - 40 mm
  - 50 mm
- 44-29. If a woman suffers myocardial infarction during pregnancy, which of the following is correct?
- The patient should be delivered immediately.
  - Management is generally the same as in the non-pregnant patient.
  - The mortality rate is equal to that of nonpregnant women with infarction.
  - All of the above.



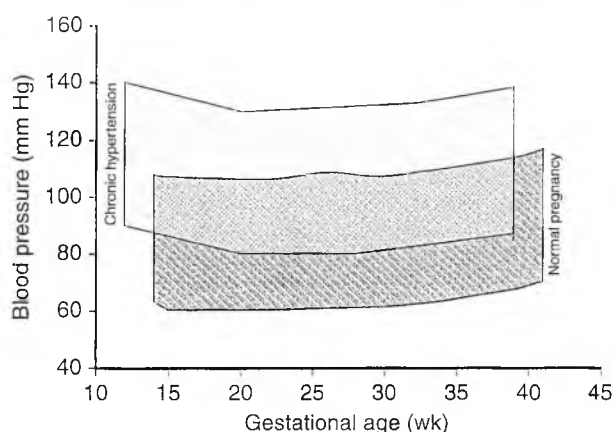
**Chapter 44 Answer Key**

| Question number | Letter answer | Page cited | Header cited                                            | Question number | Letter answer | Page cited | Header cited                                           |
|-----------------|---------------|------------|---------------------------------------------------------|-----------------|---------------|------------|--------------------------------------------------------|
| 44-1            | c             | p. 959     | Table 44-1                                              | 44-15           | d             | p. 966     | Mitral Insufficiency                                   |
| 44-2            | c             | p. 960     | Table 44-2                                              | 44-16           | c             | p. 967     | Aortic Stenosis                                        |
| 44-3            | c             | p. 959     | Diagnosis of Heart Disease                              | 44-17           | a             | p. 968     | Atrial Septal Defects                                  |
| 44-4            | c             | p. 959     | Clinical Classification of Heart Disease                | 44-18           | b             | p. 969     | Cyanotic Heart Disease                                 |
| 44-5            | d             | p. 961     | Congenital Heart Disease in Offspring                   | 44-19           | d             | p. 970     | Eisenmenger Syndrome                                   |
| 44-6            | b             | p. 961     | General Management                                      | 44-20           | a             | p. 971     | Pulmonary Hypertension and Pregnancy and Table 44-8    |
| 44-7            | a             | p. 962     | Management of NYHA Class I & II Disease                 | 44-21           | d             | p. 972     | Peripartum Cardiomyopathy                              |
| 44-8            | b             | p. 963     | Valve Replacement Before Pregnancy/Effects on Pregnancy | 44-22           | a             | p. 972     | Idiopathic Cardiomyopathy in Pregnancy and Figure 44-3 |
| 44-9            | c             | p. 964     | Table 44-6                                              | 44-23           | d             | p. 973     | Hypertrophic Cardiomyopathy                            |
| 44-10           | c             | p. 964     | Recommendations for Anticoagulation                     | 44-24           | a             | p. 973     | Hypertrophic Cardiomyopathy                            |
| 44-11           | b             | p. 965     | Valve Replacement During Pregnancy                      | 44-25           | a             | p. 974     | Infectious Endocarditis                                |
| 44-12           | a             | p. 965     | Mitral Valvotomy During Pregnancy                       | 44-26           | a             | p. 975     | Infectious Endocarditis/Obstetrical Procedures         |
| 44-13           | b             | p. 965     | Pregnancy After Heart Transplantation                   | 44-27           | b             | p. 975     | Arrhythmias                                            |
| 44-14           | a             | p. 965     | Mitral Stenosis                                         | 44-28           | c             | p. 976     | Aortic Dissection/Effects of Pregnancy                 |
|                 |               |            |                                                         | 44-29           | b             | p. 977     | Ischemic Heart Disease                                 |

## CHAPTER 45

# Chronic Hypertension

45-1. What conclusions can be drawn from this figure?



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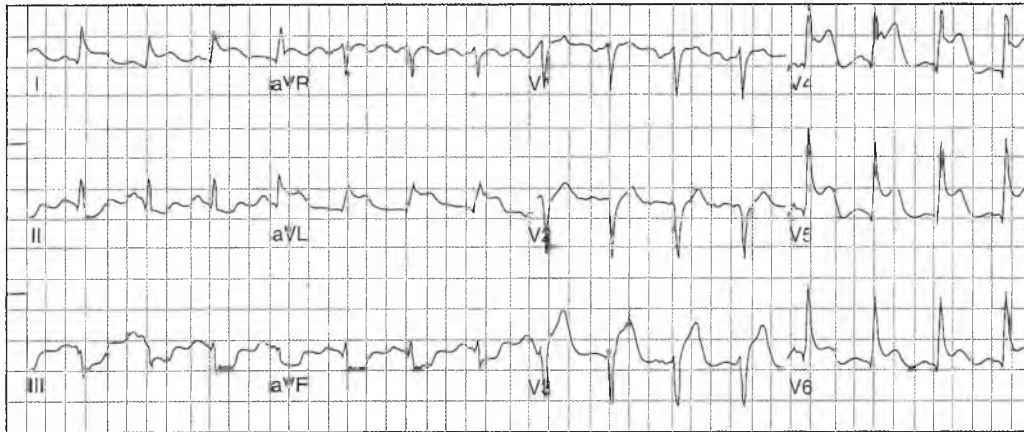
- a. Women without hypertension have increased vascular resistance.
  - b. The nadir for blood pressure in healthy women occurs at 20 weeks' gestation.
  - c. The nadir for blood pressure in women with chronic hypertension occurs at 15 weeks.
  - d. Most women with chronic hypertension have improvement of their blood pressure during early pregnancy.
- 45-2. Prehypertension is defined by which of the following systolic blood pressure ranges?
- a. 100–139 mm Hg
  - b. 120–139 mm Hg
  - c. 140–159 mm Hg
  - d. 160–180 mm Hg
- 45-3. Factors influencing long-term morbidity related to chronic hypertension include all **EXCEPT** which of the following?
- a. Age
  - b. Alcohol use
  - c. Physical activity
  - d. Reproductive history
- 45-4. Consideration should be given to treating hypertension even at levels lower than 160/90 mm Hg in all **EXCEPT** which of the following patients?
- a. Females
  - b. The elderly
  - c. Renal disease patients
  - d. Those with history of stroke
- 45-5. Which of the following medication classes should be initial treatment of Stage I hypertension in nonpregnant patients?
- a.  $\beta$ -Blockers
  - b. Thiazide-type diuretics
  - c. Calcium-channel blockers
  - d. Angiotensin-converting enzyme inhibitors
- 45-6. How does obesity impact chronic hypertension?
- a. Obesity is independent of chronic hypertension.
  - b. The rate of chronic hypertension is 10 times higher in obese women.
  - c. The rate of chronic hypertension doubles in obese women.
  - d. None of the above.

45-7. Treatment of chronic hypertension reduces the risk of this complication shown below by what degree?

- a. 10%
- b. 25%
- c. 35%
- d. 50%

45-11. Risk of fetal loss is increased in women with chronic hypertension when the serum creatinine is above what level at conception?

- a. 1.0 mg/dL
- b. 1.4 mg/dL
- c. 2.0 mg/dL
- d. 2.4 mg/dL



Reproduced, with permission, from Crawford MH. Current Diagnosis & Treatment: Cardiology 3rd ed. New York, McGraw-Hill, 2009, Figure 5-2a.

45-8. To manage hypertension, lifestyle modifications that may be effective in women include all **EXCEPT** which of the following?

- a. Maintain normal body mass index
- b. Reduce sodium intake to 2.4 g/d
- c. Limit alcohol consumption to two drinks daily
- d. Engage in aerobic exercise for 30 minutes daily

45-9. Which of the following is true of left ventricular hypertrophy identified by echocardiography?

- a. It may be evidence of long-standing hypertension.
- b. It may be evidence of poorly controlled hypertension.
- c. It may be associated with increased risk for heart failure during pregnancy.
- d. All of the above.

45-10. Preconceptional evaluation in women with chronic hypertension should include all **EXCEPT** which of the following?

- a. Echocardiography
- b. Assessment of renal function
- c. Ophthalmological examination
- d. PA and lateral chest radiographs

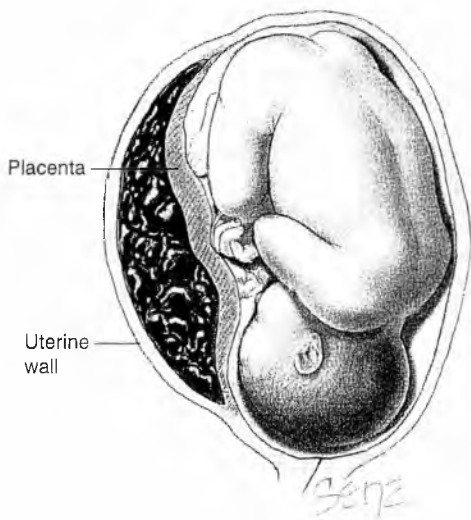
45-12. Which of the following statements regarding preeclampsia that is superimposed on chronic hypertension is most accurate?

- a. It occurs in half of all pregnancies complicated by chronic hypertension.
- b. The risk is decreased when medication is required to maintain blood pressure control.
- c. The risk of developing superimposed preeclampsia is increased in women with baseline proteinuria.
- d. The risk of developing superimposed preeclampsia is directly related to the severity of hypertension at the initiation of the pregnancy.

45-13. Trials have studied which of the following therapies to prevent preeclampsia in women with chronic hypertension?

- a. Folic acid
- b. Interferon
- c. Vitamin B<sub>12</sub>
- d. Vitamins C and E

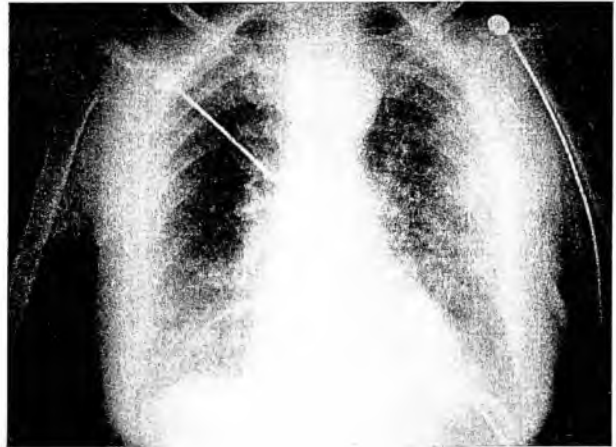
- 45-14. All EXCEPT which of the following statements about this pregnancy complication are accurate?



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- a. Folic acid may reduce the risk.
  - b. It occurs in 1/200–300 pregnancies overall.
  - c. Smoking is associated with a reduced risk.
  - d. Compared with all pregnancies, the risk is doubled in women with chronic hypertension.
- 45-15. What percent of fetuses in women with chronic hypertension and superimposed preeclampsia will be growth restricted?
- a. 5%
  - b. 25%
  - c. 50%
  - d. 75%
- 45-16. All EXCEPT which of the following are associated with increased risk for fetal-growth restriction in the setting of chronic hypertension?
- a. Older maternal age
  - b. Early onset proteinuria
  - c. Superimposed preeclampsia
  - d. Successful treatment with a single antihypertensive agent
- 45-17. Which of the following conditions increases the risk of preterm delivery when it coexists with chronic hypertension?
- a. Diabetes mellitus
  - b. Migraine headaches
  - c. Supraventricular tachycardia
  - d. Benign intracranial hypertension

- 45-18. All EXCEPT which of the following statements regarding the use of diuretics during pregnancy are true?
- a. Perinatal outcomes are not affected by their use.
  - b. Plasma volume expansion in pregnancy may be affected.
  - c. Peripheral vascular resistance falls with diuretic use.
  - d. They should be the first-line therapy in the treatment of chronic hypertension in pregnancy.
- 45-19. Labetalol is an example of what type of antihypertensive medication?
- a.  $\alpha$ -adrenergic blocker
  - b.  $\beta$ -adrenergic blocker
  - c.  $\alpha/\beta$ -adrenergic blocker
  - d. Angiotensin-receptor blocker
- 45-20. Which of the following antihypertensive medications has been associated with this complication?



Reproduced, with permission, from Stone CK, Humphries RL: Current Diagnosis & Treatment: Emergency Medicine, 6th ed. New York, McGraw-Hill, 2008, Figure 11-5.

- a. Atenolol
  - b. Enalapril
  - c. Nifedipine
  - d. Methyldopa
- 45-21. Use of angiotensin-converting enzyme inhibitors is associated with which of the following fetal abnormalities when used in the second and third trimesters?
- a. Hypocalvaria
  - b. Ventriculomegaly
  - c. Periventricular leukomalacia
  - d. Ductus arteriosus constriction

- 45-22. Which adverse pregnancy outcome is **NOT** increased in pregnancies complicated by chronic hypertension?
- Preterm birth
  - Perinatal death
  - Fetal-growth restriction
  - Spontaneous preterm rupture of membranes
- 45-23. What is the mechanism of action of  $\alpha$ -methyldopa?
- It relaxes arterial smooth muscles.
  - It increases sodium and water diuresis.
  - It acts centrally to decrease vascular tone.
  - It increases peripheral vascular resistance.
- 45-24.  $\beta$ -blockers, in particular atenolol, are associated with which of the following perinatal morbidities?
- Preterm birth
  - Hyperglycemia
  - Fetal-growth restriction
  - Respiratory distress syndrome
- 45-25. The criteria that support the diagnosis of superimposed preeclampsia in women with underlying chronic hypertension include all **EXCEPT** which of the following?
- Leukocytosis
  - Severe headache
  - Thrombocytopenia
  - New-onset proteinuria
- 45-26. Regarding delivery of chronically hypertensive women with superimposed severe preeclampsia, all **EXCEPT** which of the following are acceptable?
- Induction of labor
  - Epidural analgesia
  - Await spontaneous labor
  - Vaginal route of delivery
- 45-27. In the puerperium, women with severe chronic hypertension are at greatest risk for which of the following?
- Hemorrhage
  - Pulmonary edema
  - Ovarian vein thrombosis
  - Deep-vein thrombosis

## Chapter 45 Answer Key

| Question number | Letter answer | Page cited | Header cited                                  |
|-----------------|---------------|------------|-----------------------------------------------|
| 45-1            | d             | p. 985     | Figure 45-1                                   |
| 45-2            | b             | p. 984     | Table 45-1                                    |
| 45-3            | d             | p. 983     | Definitions                                   |
| 45-4            | a             | p. 983     | Definitions                                   |
| 45-5            | b             | p. 985     | Treatment for Non-pregnant Adults             |
| 45-6            | b             | p. 984     | Diagnosis                                     |
| 45-7            | b             | p. 985     | Treatment for Non-pregnant Adults             |
| 45-8            | c             | p. 986     | Table 45-2                                    |
| 45-9            | d             | p. 986     | Preconceptional & Early Pregnancy Evaluations |
| 45-10           | d             | p. 986     | Preconceptional & Early Pregnancy Evaluations |
| 45-11           | b             | p. 986     | Preconceptional & Early Pregnancy Evaluations |
| 45-12           | d             | p. 987     | Superimposed Preeclampsia                     |
| 45-13           | d             | p. 987     | Prevention of Superimposed Preeclampsia       |

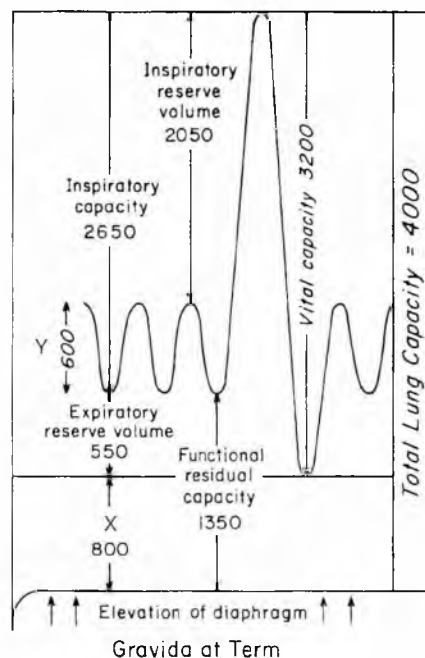
| Question number | Letter answer | Page cited | Header cited                                                   |
|-----------------|---------------|------------|----------------------------------------------------------------|
| 45-14           | c             | p. 987     | Placental Abruption                                            |
| 45-15           | c             | p. 987     | Fetal-Growth Restrictions                                      |
| 45-16           | d             | p. 988     | Fetal-Growth Restriction                                       |
| 45-17           | a             | p. 988     | Preterm Delivery and Perinatal Mortality                       |
| 45-18           | d             | p. 989     | Diuretics                                                      |
| 45-19           | c             | p. 989     | Adrenergic-Blocking Agents                                     |
| 45-20           | c             | p. 989     | Calcium-Channel Blockers                                       |
| 45-21           | a             | p. 989     | Angiotensin-Converting Enzyme Inhibitors                       |
| 45-22           | d             | p. 988     | Table 45-3                                                     |
| 45-23           | c             | p. 989     | Adrenergic-Blocking Agents                                     |
| 45-24           | c             | p. 991     | Antihypertensive Therapy Selection                             |
| 45-25           | a             | p. 992     | Pregnancy Aggravated Hypertension or Superimposed Preeclampsia |
| 45-26           | c             | p. 992     | Delivery                                                       |
| 45-27           | b             | p. 992     | Postpartum Considerations                                      |

## CHAPTER 46

# Pulmonary Disorders

- 46-1. What happens to vital capacity in pregnancy?
- It increases by 20%.
  - It decreases by 50%.
  - It increases by 50%.
  - It remains unchanged in pregnancy.
- 46-2. What effect does progesterone have on tidal volume?
- It decreases by 40%.
  - It increases by 40%.
  - It decreases by 20%.
  - It has no effect.
- 46-3. What happens to  $\text{CO}_2$  production and  $\text{PCO}_2$  in pregnancy?
- Both increase
  - Both decrease
  - $\text{CO}_2$  production increases and  $\text{PCO}_2$  decreases
  - $\text{CO}_2$  production decreases and  $\text{PCO}_2$  increases
- 46-4. What happens to residual volume in pregnancy?
- It increases by 20%.
  - It decreases by 50%.
  - It decreases by 20%.
  - It remains unchanged in pregnancy.
- 46-5. Which statement about the changes in pulmonary physiology in pregnancy is true?
- Breathing is deeper but not more frequent.
  - Basal oxygen consumption decreases.
  - The kidney decreases bicarbonate excretion.
  - Maternal pH is slightly acidotic at 7.30.

- 46-6. In the figure below the "X" and "Y" are marking which of the following?



Reproduced, with permission, from Cunningham FG, Leveno KL, Bloom SL, et al: Williams Obstetrics, 22nd ed. New York, McGraw-Hill, 2005, Figure 5-12.

- "X" is expiratory reserve volume and "Y" is tidal volume.
  - "X" is residual volume and "Y" is minute volume.
  - "X" is functional residual capacity and "Y" is minute volume.
  - "X" is residual volume and "Y" is tidal volume.
- 46-7. Which of the following statement about pregnancy and asthma is true?
- Asthma in one-half of women improves, but in one-half it worsens.
  - Women with severe asthma are more likely to have an exacerbation than women with mild disease.
  - Exacerbation is most likely to occur at delivery.
  - General anesthesia is preferred over regional anesthesia at delivery.

- 46-8.** The fetal response to maternal hypoxemia includes which of the following?
- Increased umbilical blood flow
  - Decreased systemic vascular resistance
  - Decreased pulmonary vascular resistance
  - Decreased cardiac output
- 46-9.** Which of the following is the recommended treatment for moderate, persistent asthma?
- Inhaled  $\beta$ -agonist as needed
  - Low-dose inhaled corticosteroid
  - Medium-dose inhaled corticosteroids and long-acting  $\beta$ -agonist as needed
  - High-dose inhaled corticosteroids and long-acting  $\beta$ -agonist
- 46-10.** Which of the following is the recommended treatment for mild, intermittent asthma?
- Inhaled  $\beta$ -agonists as needed
  - Low-dose inhaled corticosteroid
  - Medium-dose inhaled steroids and long-acting  $\beta$ -agonist as needed
  - High-dose inhaled corticosteroids and long-acting  $\beta$ -agonist
- 46-11.** Which of the following is effective for acute asthma?
- Leukotriene modifiers
  - Cromolyn
  - Nedocromil
  - Terbutaline
- 46-12.** A 25-year-old G3P2 at 27 weeks' gestation presents for an asthma exacerbation. She is given inhaled  $\beta$ -agonist nebulizer treatments and intravenous methylprednisone. After three doses of the  $\beta$ -agonist, the patient has an  $O_2$  saturation of 96% and an  $FEV_1$  of 50%. Your next management step is which of the following?
- Admit for continued treatment with  $\beta$ -agonists and corticosteroids and observation for respiratory distress.
  - Discharge home with inhaled  $\beta$ -agonists and inhaled corticosteroids.
  - Discharge home with inhaled  $\beta$ -agonists and an oral steroid taper.
  - Start antibiotics and call anesthesia for assistance with intubation.
- 46-13.** A pregnant woman is treated for a severe asthma exacerbation at 36 weeks' gestation with oral corticosteroids. She returns to labor and delivery at 38 weeks in labor. Which of the following is the most appropriate management step?
- Give her prostaglandin  $F_{2\alpha}$  when she has postpartum hemorrhage.
  - Hold her maintenance medications during labor.
  - Forego stress-dose corticosteroids because treatment with oral corticosteroids was 2 weeks ago.
  - Determine  $FEV_1$  on admission.
- 46-14.** Which of the following is the most common cause of pneumonia?
- Influenza A
  - Mycoplasma pneumoniae*
  - Streptococcus pneumoniae*
  - Haemophilus influenza*



**46-15.** An 18-year-old G2P0 at 22 weeks' gestation presents to the emergency department complaining of cough, fever, malaise, and chest discomfort with deep breathing. The patient's vital signs are:  $T = 38^{\circ}\text{C}$ , heart rate = 100 bpm, respiratory rate = 24, blood pressure = 100/60. The patient's chest radiograph is given here. Which of the following is the best treatment for this patient?

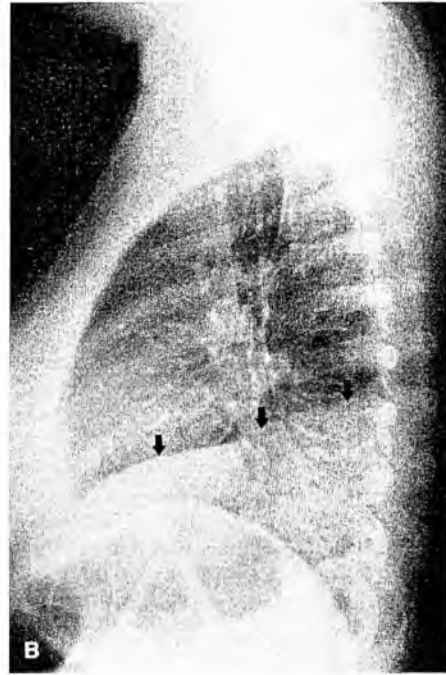
- a. Azithromycin
- b. Vancomycin
- c. Levofloxacin
- d. Penicillin



Reproduced, with permission, from Cunningham FG, Leveno KJ, Bloom SL, et al: *Williams Obstetrics*, 22nd ed., New York, McGraw-Hill, 2005, Figure 46-1.

**46-17.** A 19-year-old G1P0 at 30 weeks' gestation presents to triage on a cold January evening with a 2-day history of cough, myalgias, fever, and nausea. The patient reports several sick contacts with the same symptoms in her household. The patient's vital signs are:  $T = 38^{\circ}\text{C}$ , heart rate = 130 bpm, respiratory rate = 20, blood pressure = 100/60. The patient appears ill. In addition to a complete blood count, what other test should be sent?

- a. Sputum culture
- b. C reactive protein
- c. Rapid test for influenza
- d. Urinalysis



Reproduced, with permission, from Cunningham FG, Leveno KJ, Bloom SL, et al: *Williams Obstetrics*, 23rd ed., New York, McGraw-Hill, 2010, Figure 46-2.

**46-16.** In cases of pneumonia, approximately how long do radiographic abnormalities take to resolve?

- a. 2-4 days
- b. 1-2 weeks
- c. 6 weeks
- d. 6 months

- 46-18.** The patient in Question 46-17 is admitted for influenza. A chest radiograph is obtained, and the image is given here. Approximately how many pregnant women with influenza develop pneumonia?



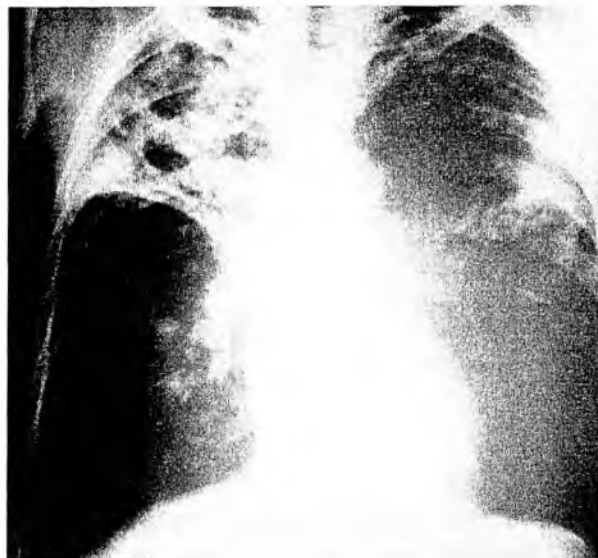
Reproduced, with permission, from Cunningham FG, Leveno KL, Bloom SL, et al: Williams Obstetrics, 22nd ed. New York, McGraw-Hill, 2005, Figure 46-2.

- a. 10%
  - b. 25%
  - c. 50%
  - d. 60%
- 46-19.** A 22-year-old G1P0 at 25 weeks' gestation and infected with human immunodeficiency virus (HIV) is prescribed highly active antiretroviral therapy. Initial laboratory results reveal a viral load of 22,000 copies/mL and a CD4<sup>+</sup> count of 150/μL. In addition to the antiretrovirals, the patient should also receive which of the following?
- a. Azithromycin for *Mycobacterium avium* complex (MAC) prophylaxis
  - b. Trimethoprim/sulfamethoxazole for *Pneumocystis jiroveci* prophylaxis
  - c. Amphotericin B for fungal infection prophylaxis
  - d. Pentamidine for *Pneumocystis jiroveci* prophylaxis
- 46-20.** Which of the following is **NOT** considered a high-risk group by the Centers for Disease Control and Prevention for latent tuberculosis infection?
- a. Prisoners
  - b. HIV infected
  - c. Health care workers
  - d. College students

- 46-21.** A 22-year-old G1P0 at 25 weeks' gestation with HIV infection on antiretroviral therapy has a purified protein derivative (PPD) test performed. Two days later, the induration at the test site is noted to be 7 mm. She has no symptoms of tuberculosis, and her chest radiography shows normal findings. Your plan is which of the following?

- a. Treat postpartum because the chest radiograph is normal
- b. Start treatment now with isoniazid because she has an 8% annual risk for active disease
- c. Start treatment now with four-drug therapy because she has an 8% annual risk for active disease
- d. No treatment is required for a reading of 7 mm

- 46-22.** A 26-year-old G2P1 at 16 weeks' gestation presents to the emergency department complaining of cough and fever. She is a recent immigrant from Africa. The patient is placed in an isolation room, and a PPD is placed. The induration at the test site 2 days later is 10 mm. A chest radiograph is obtained, and it is provided here. In cases of active tuberculosis, what drug should be added to the initial three-drug regimen if isoniazid resistance is likely?



Reproduced, with permission, from McPhee SJ, Papadakis MA: Current Medical Diagnosis & Treatment 2010. New York, McGraw-Hill, 2010, Plate 66.

- a. Rifampin
- b. Ethambutol
- c. Pyridoxine
- d. Pyrazinamide

- 46-23. The gene involved in cystic fibrosis is found on which chromosome?
- Chromosome 3
  - Chromosome 5
  - Chromosome 7
  - Chromosome 9
- 46-24. In patients with cystic fibrosis, chronic inflammation of the lungs is most commonly caused by which of the following?
- Staphylococcus aureus*
  - Haemophilus influenzae*
  - Pseudomonas aeruginosa*
  - Burkholderia cepacia*
- 46-25. Women with cystic fibrosis are subfertile primarily because of which of the following?
- Anovulation
  - Dysfunctional endometrium
  - Tenacious cervical mucus
  - Poor nutritional status
- 46-26. In cystic fibrosis, which of the following is the best predictor of pregnancy and long-term maternal outcome?
- Pulmonary function study results
  - Pseudomonas* colonization
  - Pancreatic insufficiency
  - Which mutation the patient carries
- 46-27. A 30-year-old G5P4 at 20 weeks' gestation in otherwise good health is brought into the emergency department for altered mental status. She is somnolent, complaining of headache, dizziness, and palpitations. Emergency providers document that she was vomiting in the ambulance. The patient's husband reports that she was sleeping in a small room in the back of the house with several space heaters. You are concerned that this could have been a poorly ventilated room, and she could have carbon monoxide poisoning. Treatment for this includes which of the following?
- Plasma exchange
  - 100% O<sub>2</sub> by face mask and possibly hyperbaric treatments
  - Dialysis
  - Blood transfusion

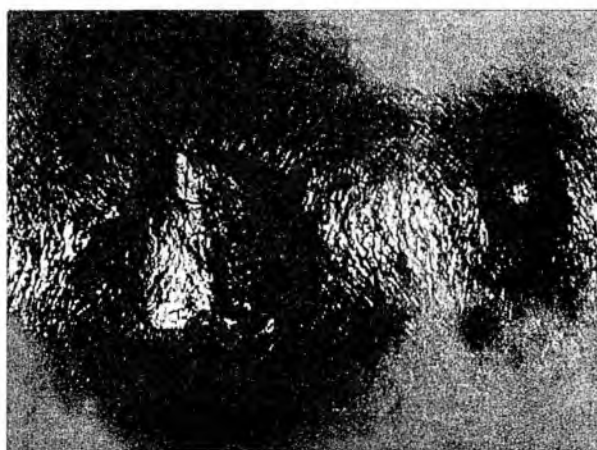
**Chapter 46 Answer Key**

| Question number | Letter answer | Page cited | Header cited                   | Question number | Letter answer | Page cited | Header cited              |
|-----------------|---------------|------------|--------------------------------|-----------------|---------------|------------|---------------------------|
| 46-1            | a             | p. 996     | Pulmonary Physiology           | 46-15           | a             | p. 1002    | Bacterial Pneumonia       |
| 46-2            | b             | p. 996     | Pulmonary Physiology           | 46-16           | c             | p. 1003    | Bacterial Pneumonia       |
| 46-3            | c             | p. 996     | Pulmonary Physiology           | 46-17           | c             | p. 1003    | Influenza Pneumonia       |
| 46-4            | c             | p. 996     | Pulmonary Physiology           | 46-18           | a             | p. 1003    | Influenza Pneumonia       |
| 46-5            | a             | p. 996     | Pulmonary Physiology           | 46-19           | b             | p. 1004    | Influenza Pneumonia       |
| 46-6            | d             | p. 996     | Pulmonary Physiology           | 46-20           | d             | p. 1006    | Tuberculosis              |
| 46-7            | b             | p. 998     | Effects of Pregnancy on Asthma | 46-21           | b             | p. 1006    | Tuberculosis              |
| 46-8            | d             | p. 999     | Effects of Pregnancy on Asthma | 46-22           | d             | p. 1006    | Tuberculosis              |
| 46-9            | c             | p. 1000    | Table 46-3                     | 46-23           | c             | p. 1007    | Cystic Fibrosis           |
| 46-10           | a             | p. 1000    | Table 46-3                     | 46-24           | c             | p. 1008    | Cystic Fibrosis           |
| 46-11           | d             | p. 1000    | Management of Chronic Asthma   | 46-25           | c             | p. 1008    | Cystic Fibrosis           |
| 46-12           | a             | p. 1001    | Management of Acute Asthma     | 46-26           | a             | p. 1008    | Cystic Fibrosis           |
| 46-13           | d             | p. 1001    | Management of Acute Asthma     | 46-27           | b             | p. 1009    | Carbon Monoxide Poisoning |
| 46-14           | c             | p. 1001    | Bacterial Pneumonia            |                 |               |            |                           |

## CHAPTER 47

# Thromboembolic Disorders

- 47-1.** What is the incidence of thromboembolic events in pregnancy?
- 5%
  - 1%
  - 0.1%
  - 0.01%
- 47-2.** Which of the following statements is correct regarding the timing of pregnancy-related deep-vein thromboses (DVT) and pulmonary emboli (PE)?
- DVT is more common antepartum, and PE is more common postpartum.
  - PE is more common antepartum, and DVT is more common postpartum.
  - DVT and PE are more common antepartum.
  - DVT and PE are more common postpartum.
- 47-3.** All **EXCEPT** which of the following conditions have been associated with an increased risk for thromboembolism?
- Anemia
  - Forceps delivery
  - Twin pregnancy
  - Preeclampsia
- 47-4.** Approximately what percentage of women with thrombosis will have an identifiable thrombophilia?
- 15%
  - 30%
  - 50%
  - 70%
- 47-5.** Which of the following inherited thrombophilias is the most thrombogenic?
- Factor V Leiden mutation
  - Hyperhomocysteinemia
  - Antiphospholipid syndrome
  - Antithrombin deficiency
- 47-6.** Which of the following components of the coagulation cascade increase as a part of normal pregnancy?
- Protein S levels
  - Homocysteine levels
  - Antithrombin levels
  - None of the above
- 47-7.** On day 1 of life, a seemingly healthy neonate who was delivered at term suddenly develops fever and diffuse rash seen here. This is most likely a manifestation of which thrombophilic condition?



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- Heterozygous factor V Leiden mutation
- Homozygous protein S deficiency
- Heterozygous protein C deficiency
- Homozygous prothrombin mutation

- 47-8.** Which of the following are true regarding the factor V Leiden mutation?
- It is a missense mutation in the factor V gene.
  - It is the most prevalent heritable thrombophilia.
  - DNA analysis is required for its diagnosis in pregnancy.
  - All of the above.

- 47-9.** All **EXCEPT** which of the following can be causes of hyperhomocysteinemia?
- Vitamin D deficiency
  - Folate deficiency
  - Methylene-tetrahydrofolate reductase mutation
  - Vitamin B<sub>6</sub> deficiency
- 47-10.** Clinical criteria for diagnosing antiphospholipid syndrome include which of the following?
- At least one fetal death beyond 6 weeks' gestation
  - At least one preterm birth before 36 weeks
  - Three consecutive spontaneous abortions before 10 weeks
  - All of the above
- 47-11.** A 31-year-old G2P1 at 26 weeks' gestation presents complaining of lower extremity pain, and examination reveals the following findings. If the diagnosis is confirmed, what is her risk to have an associated pulmonary embolus if this condition is not treated?



Reproduced, with permission, from Knoop KJ, Stack LB, Storrow AB, et al: *Atlas of Emergency Medicine*, 3rd ed. New York, McGraw-Hill, 2010:336. Photo contributor: Kevin J. Knoop, MD, MS.

- 10%
- 25%
- 50%
- 75%

- 47-12.** Which of the following statement is true regarding deep-vein thromboses in pregnancy?
- Most lower extremity thromboses involve the right leg.
  - Extensive clot formation may be associated with little pain or swelling.
  - A positive Homans sign is diagnostic of thrombosis.
  - The clinical diagnosis is usually easy to make.
- 47-13.** Although it remains the gold standard for diagnosing deep-vein thrombosis, venography is used infrequently for all **EXCEPT** which of the following reasons?
- Invasiveness
  - Intravenous contrast requirement
  - Increased risk for thrombosis
  - Low negative predictive value
- 47-14.** Impedance plethysmography is an accurate technique to diagnose thromboses in all **EXCEPT** which of the following veins?
- Calf
  - Popliteal
  - Femoral
  - Lower iliac
- 47-15.** A 22-year-old G1P0 presents with lower extremity pain and compression ultrasonography is performed with the following findings. Which of the following is the next best management step?

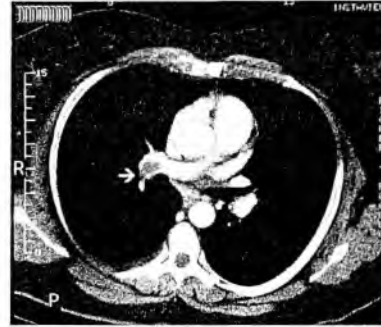


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- Venography
- V/Q scan
- Anticoagulation
- Embolectomy

- 47-16. D-dimer concentrations can be elevated with which of the following pregnancy-related complications?
- Preeclampsia
  - Placenta previa
  - Gestational diabetes
  - Prurigo of pregnancy
- 47-17. Anticoagulation with unfractionated heparin should include an initial intravenous infusion which is continued for at least how many days?
- 2
  - 5
  - 10
  - 14
- 47-18. Compared with unfractionated heparin, low-molecular-weight heparins have which advantage?
- Fewer bleeding complications
  - Less interference with platelets
  - More predictable anticoagulant effect
  - All of the above
- 47-19. In women who are fully anticoagulated with low-molecular-weight heparin, periodic monitoring of antifactor Xa levels is particularly important when which of the following comorbidities is present?
- Pneumonia
  - Renal insufficiency
  - Chronic hypertension
  - Gestational diabetes
- 47-20. Most cases of heparin-induced thrombocytopenia manifest within what interval following initiation of heparin therapy?
- First 5 days
  - First 10 days
  - First 15 days
  - First 20 days
- 47-21. What is the most common presenting symptom in patients with a pulmonary embolus?
- Dyspnea
  - Chest pain
  - Cough
  - Syncope

- 47-22. A 35-year-old G4P3 with three previous cesarean deliveries presents at 39 weeks' gestation complaining of ruptured fetal membranes and shortness of breath. During the preoperative evaluation, she is noted to have tachycardia and hypoxia, and a CT angiography is emergently performed with the results shown in the figure (*arrow points to filling defect*). Which of the following is the most appropriate next step?



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- Unfractionated heparin infusion
  - Thrombolytic administration
  - Pulmonary angiography
  - Placement of a vena cava filter
- 47-23. What is the procedure-related mortality rate for the invasive technique used to obtain this image?



Reproduced, with permission, from Fuster V, O'Rourke RA, Walsh RA, et al: Hurst's the Heart, 12th ed. New York, McGraw-Hill, 2008, Figure 72-11.

- 0.005%
- 0.05%
- 0.5%
- 5%

- 47-24. A 22-year-old G1P0 presents at 34 weeks' gestation complaining of the gradual onset of dyspnea. Her vital signs are normal except for mild tachycardia. Despite a low clinical suspicion, a V/Q scan is performed with no mismatch defect identified, as shown in the image. Which of the following is the most appropriate next step?
- Adjusted-dose anticoagulation
  - Prophylactic-dose anticoagulation
  - Pulmonary angiography
  - Observation
- 47-25. In general, the average radiation exposure to the fetus with multidetector spiral CT scanning is less than that with V/Q scanning **EXCEPT** for what time period?
- First trimester
  - Second trimester
  - Third trimester
  - Exposure is less throughout pregnancy



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**Chapter 47 Answer Key**

| Question number | Letter answer | Page cited | Header cited           |
|-----------------|---------------|------------|------------------------|
| 47-1            | c             | p. 1013    | Introduction           |
| 47-2            | a             | p. 1013    | Introduction           |
| 47-3            | b             | p. 1014    | Table 47-1             |
| 47-4            | c             | p. 1014    | Pathophysiology        |
| 47-5            | d             | p. 1014    | Thrombophilias         |
| 47-6            | d             | p. 1015    | Thrombophilias         |
| 47-7            | b             | p. 1015    | Thrombophilias         |
| 47-8            | d             | p. 1016    | Thrombophilias         |
| 47-9            | a             | p. 1017    | Thrombophilias         |
| 47-10           | c             | p. 1017    | Thrombophilias         |
| 47-11           | b             | p. 1019    | Deep-Venous Thrombosis |
| 47-12           | b             | p. 1019    | Deep-Venous Thrombosis |
| 47-13           | d             | p. 1019    | Deep-Venous Thrombosis |

| Question number | Letter answer | Page cited | Header cited           |
|-----------------|---------------|------------|------------------------|
| 47-14           | a             | p. 1020    | Deep-Venous Thrombosis |
| 47-15           | c             | p. 1020    | Deep-Venous Thrombosis |
| 47-16           | a             | p. 1020    | Deep-Venous Thrombosis |
| 47-17           | b             | p. 1021    | Deep-Venous Thrombosis |
| 47-18           | d             | p. 1021    | Deep-Venous Thrombosis |
| 47-19           | b             | p. 1022    | Deep-Venous Thrombosis |
| 47-20           | c             | p. 1023    | Deep-Venous Thrombosis |
| 47-21           | a             | p. 1024    | Pulmonary Embolism     |
| 47-22           | d             | p. 1027    | Pulmonary Embolism     |
| 47-23           | c             | p. 1027    | Pulmonary Embolism     |
| 47-24           | d             | p. 1026    | Pulmonary Embolism     |
| 47-25           | c             | p. 1026    | Pulmonary Embolism     |

**CHAPTER 48****Renal and Urinary Tract Disorders**

- 48-1.** Abnormal proteinuria in pregnancy is which of the following?
- >30 mg/d
  - >250 mg/d
  - >300 mg/d
  - >700 mg/d
- 48-2.** Which of the following statements about renal function in pregnancy is true?
- Pregnancy induces intrarenal vasoconstriction.
  - Glomerular filtration rate increases by 40–65%.
  - Serum creatinine levels increase.
  - Serum urea concentration increases.
- 48-3.** A 30-year-old G2P1 at 20 weeks' gestation presents with a history of nephrectomy after a car accident 4 years ago. The patient has no other medical history. She had one normal spontaneous vaginal delivery 7 years ago. In regard to the patient's pregnancy, which of the following counseling points is true?
- She is at increased risk for preeclampsia.
  - Renal failure is highly likely.
  - You will evaluate her renal function. If normal, she should expect a normal pregnancy and one without renal complications.
  - She is at high risk for spontaneous abortion because of her kidney's inability to filter properly.
- 48-4.** A 15-year-old G1P0 presents for her first prenatal visit. She has no complaints. A urine culture done that day identifies >100,000 gram-negative rods per mL in her urine. Which of the following statements about the patient's management is true?
- Treatment is not required because she is asymptomatic.
  - Treatment is not required because the count is not >1 million gram-negative rods per mL.
  - Treatment should be delayed until susceptibilities are determined.
  - Treatment should be prescribed at this visit to avert symptomatic infection.
- 48-5.** The only definitively proven benefit of treating asymptomatic bacteriuria (ASB) is a reduction in the incidence of which of the following?
- Preterm births
  - Pregnancy-associated hypertension
  - Pyelonephritis
  - Low birth weight
- 48-6.** The recurrence rate of ASB during the same pregnancy is which of the following?
- 10%
  - 30%
  - 60%
  - 90%
- 48-7.** A 17-year-old G2P1 at 20 weeks' gestation presents with dysuria, frequency, and urgency. She is afebrile and has no costovertebral angle tenderness. Urinalysis indicates pyuria but her urine culture is negative. The likely offending organism is:
- Escherichia coli*
  - Pseudomonas aeruginosa*
  - Chlamydia trachomatis*
  - Group B streptococcus

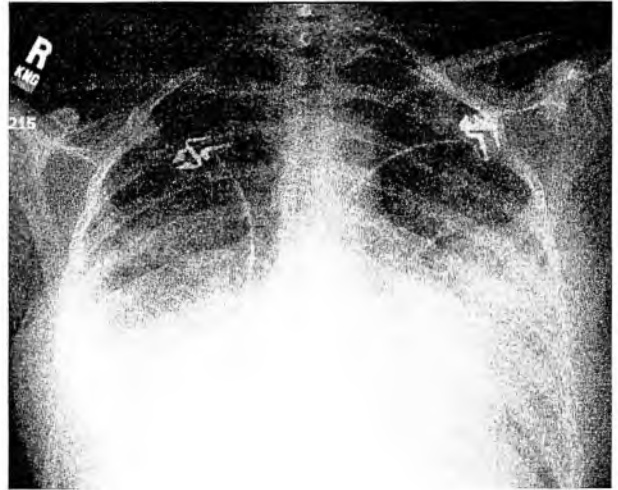
- 48-8.** In cases of pyelonephritis in pregnancy, the most common organism isolated is pictured here. The organism is which of the following?



Contributed by Professor Shirley Lowe, University of California, San Francisco School of Medicine.

- a. Group B *streptococcus*
  - b. *Escherichia coli*
  - c. *Klebsiella pneumoniae*
  - d. *Proteus mirabilis*
- 48-9.** Which of the following is the most common complication of pyelonephritis in pregnancy?
- a. Anemia
  - b. Renal dysfunction
  - c. Respiratory insufficiency
  - d. Bacteremia

- 48-10.** A 17-year-old G1P0 at 20 weeks' gestation presents to the emergency department complaining of fever, flank pain, and dysuria for 5 days. She is admitted with pyelonephritis and started on intravenous fluids and antibiotics. Eighteen hours later, the patient is complaining of shortness of breath. Her respiratory rate is 26, and her O<sub>2</sub> saturation is 89%. A chest radiograph is obtained, and it is provided here. What percentage of women with pyelonephritis have this complication?



Reproduced with permission from Cunningham FG, et al: Williams Obstetrics, 22nd ed. New York, McGraw-Hill, 2005, Figure 42-2.

- a. 0.5%
  - b. 10%
  - c. 25%
  - d. 50%
- 48-11.** In a setting of limited resources, which of the following steps could be eliminated from the management of pyelonephritis in pregnancy to be more cost effective?
- a. Urine culture
  - b. Intravenous antibiotics
  - c. Intravenous fluids
  - d. Blood culture
- 48-12.** In pregnant women treated for pyelonephritis, 95% are afebrile by what time?
- a. 12 hours
  - b. 24 hours
  - c. 48 hours
  - d. 72 hours

**48-13.** A 22-year-old G1P0 at 20 weeks' gestation is admitted for pyelonephritis. She is started on intravenous antibiotics to which the offending organism is found to be susceptible. After 72 hours, the patient continues to spike temperatures of 39°C. Which of the following is the next best management step?

- a. Computed tomography (CT) scan
- b. Stop antibiotics
- c. Renal sonography
- d. Renal biopsy

**48-14.** The patient in Question 48-13 eventually improves. After being afebrile for 24 hours, she is discharged home with a 7-day course of oral antibiotics. Which of the following is the best way to prevent reinfection?

- a. Urine cultures at every prenatal visit
- b. Nitrofurantoin 100 mg orally at bedtime for the remainder of the pregnancy
- c. Recommend she consume 2 L of water per day
- d. Prescribe pelvic rest for the remainder of the pregnancy

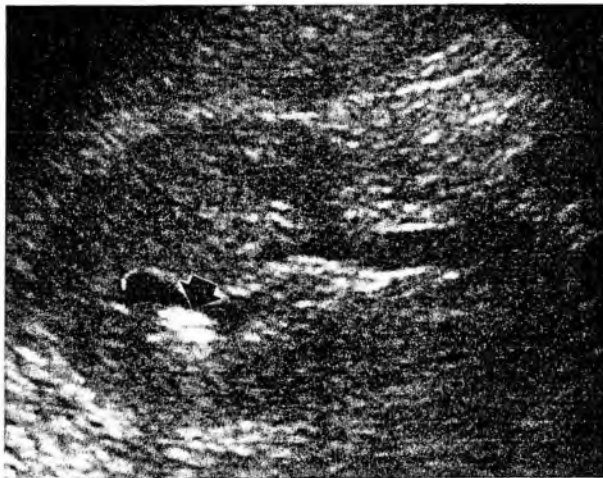
**48-15.** Which of the following promotes the formation of kidney stones?

- a. Low calcium diet
- b. Low sodium diet
- c. Low protein diet
- d. Thiazide diuretics

**48-16.** In pregnant women, which of the following is the most common symptom of nephrolithiasis?

- a. Hematuria
- b. Fever
- c. Frequency
- d. Pain

**48-17.** A 24-year-old G1P0 at 15 weeks' gestation presents with severe flank pain and hematuria. She is afebrile. You suspect she has a kidney stone, and a renal ultrasound is performed. An image from that study is provided here, and the arrow points to the area of interest. A urinalysis is positive only for blood. Which of the following is the next best management step?



Reproduced, with permission, from Tanagho EA, McAninch JW: *Smith's General Urology*, 17th ed. New York, McGraw-Hill, 2008, Figure 6-23.

- a. CT scan to confirm nephrolithiasis followed by intravenous hydration and pain control
- b. Intravenous hydration and pain control only
- c. Pain medication, antibiotics, and ureteral stenting
- d. Intravenous pyelogram to confirm nephrolithiasis, followed by hydration, pain control, and laser lithotripsy

**48-18.** For renal disease to be considered chronic, it must be present for what length of time?

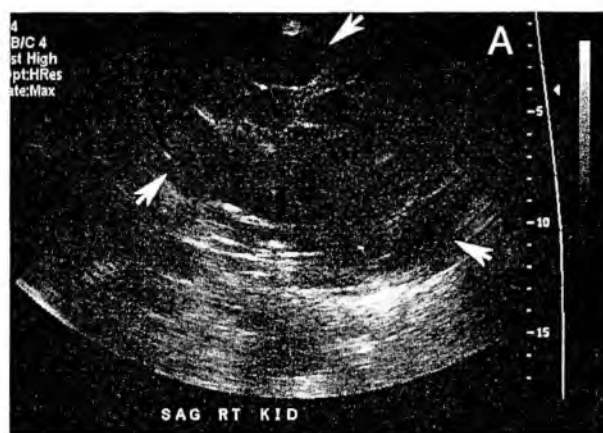
- a. 3 weeks
- b. 6 weeks
- c. 3 months
- d. 6 months

**48-19.** Which of the following is the most common cause of end-stage renal disease?

- a. Hypertension
- b. Polycystic kidney disease
- c. Diabetes mellitus
- d. Glomerulonephritis

- 48-20. Which of the following statements about physiologic adaptations during pregnancy is true?
- In cases of mild renal insufficiency, pregnancy increases glomerular filtration.
  - In cases of severe renal insufficiency, pregnancy increases glomerular filtration.
  - Women with mild renal dysfunction do not expand their blood volume.
  - In women with severe renal dysfunction, pregnancy causes anemia to improve.
- 48-21. Which of the following is the most common complication in pregnant women with chronic renal disease?
- Fetal-growth restriction
  - Worsening renal function
  - Preterm birth
  - Hypertension
- 48-22. In managing women with chronic renal disease, which of the following is true?
- The patient should be placed on a low protein diet while pregnant.
  - These women are infertile so birth control does not need to be addressed.
  - To avoid abrupt volume changes and hypotension in those pregnant women undergoing dialysis, the frequency of dialysis sessions should be increased.
  - Peritoneal dialysis is contraindicated in pregnancy.
- 48-23. A 32-year-old nulligravida presents 1 year after a kidney transplant for preconceptional counseling. Which of the following is appropriate counseling?
- She can start trying to get pregnant anytime.
  - The severity of her hypertension is not important in regard to the pregnancy.
  - Corticosteroids will not increase her chances of gestational diabetes.
  - Renal function should be stable with a serum creatinine of  $<2$  mg/dL and preferably  $<1.5$  mg/dL.

- 48-24. Which of the following statements about the disease illustrated in this sonogram is NOT true?



Reproduced, with permission, from Fauci AS, Braunwald E, Kasper DL: Harrison's Principles of Internal Medicine, 17th ed. New York, McGraw-Hill, 2008, Figure 278-11.

- Most cases are due to *PKD1* gene mutation on chromosome 16.
  - Hypertension is uncommon.
  - Prenatal diagnosis is available if the mutation has been identified in a family member or if linkage has been established in the family.
  - Ten percent of patients with this disease die from rupture of an associated intracranial berry aneurysm.
- 48-25. Which of the following is NOT a cause of nephritic syndrome?
- Diabetes mellitus
  - Subacute bacterial endocarditis
  - Systemic lupus erythematosus
  - Poststreptococcal infection
- 48-26. Which of the following is the most common cause of minimal change disease?
- Nonsteroidal anti-inflammatory drugs
  - Viral infections
  - Idiopathic
  - Allergies

- 48-27.** In pregnant women with nephrotic syndrome, care should include which of the following?
- a.** Frequent patient visits for blood pressure evaluation because of associated preeclampsia risk
  - b.** Surveillance of fetal growth because of associated growth-restriction risks
  - c.** Counseling regarding the associated increased risk for preterm birth
  - d.** All of the above
- 48-28.** A 38-year-old G3P2 at 37 weeks' gestation with a known history of chronic hypertension presents with abdominal pain, vaginal bleeding, headache, and decreased fetal movement. She is diagnosed with placental abruption, fetal demise, and superimposed severe preeclampsia. To avoid acute tubular necrosis, which of the following is the most appropriate management step?
- a.** Reduce her blood pressure to a low normal level
  - b.** Administer diuretics if she develops oliguria
  - c.** Administer vasoconstrictors if she becomes hypotensive from blood loss
  - d.** Promptly and vigorously replace blood losses

**Chapter 48 Answer Key**

| Question number | Letter answer | Page cited | Header cited                                  |
|-----------------|---------------|------------|-----------------------------------------------|
| 48-1            | c             | p. 1033    | Assessment of Renal Function During Pregnancy |
| 48-2            | b             | p. 1033    | Pregnancy-Induced Urinary Tract Changes       |
| 48-3            | c             | p. 1034    | Pregnancy after Unilateral Nephrectomy        |
| 48-4            | d             | p. 1035    | Urinary Tract Infections                      |
| 48-5            | c             | p. 1035    | Urinary Tract Infections                      |
| 48-6            | b             | p. 1035    | Urinary Tract Infections                      |
| 48-7            | c             | p. 1036    | Cystitis and Urethritis                       |
| 48-8            | b             | p. 1036    | Acute Pyelonephritis                          |
| 48-9            | a             | p. 1036    | Acute Pyelonephritis                          |
| 48-10           | b             | p. 1037    | Acute Pyelonephritis                          |
| 48-11           | d             | p. 1037    | Acute Pyelonephritis                          |
| 48-12           | d             | p. 1037    | Acute Pyelonephritis                          |
| 48-13           | c             | p. 1038    | Acute Pyelonephritis                          |
| 48-14           | b             | p. 1038    | Acute Pyelonephritis                          |
| 48-15           | a             | p. 1038    | Reflux Nephropathy                            |

| Question number | Letter answer | Page cited | Header cited                            |
|-----------------|---------------|------------|-----------------------------------------|
| 48-16           | d             | p. 1038    | Stone Disease During Pregnancy          |
| 48-17           | b             | p. 1039    | Stone Disease During Pregnancy          |
| 48-18           | c             | p. 1039    | Chronic Renal Disease                   |
| 48-19           | c             | p. 1039    | Chronic Renal Disease                   |
| 48-20           | a             | p. 1039    | Chronic Renal Disease                   |
| 48-21           | d             | p. 1040    | Table 48-3                              |
| 48-22           | c             | p. 1041    | Dialysis During Pregnancy               |
| 48-23           | d             | p. 1042    | Pregnancy after Renal Transplantation   |
| 48-24           | b             | p. 1043    | Polycystic Kidney Disease and Pregnancy |
| 48-25           | a             | p. 1043    | Table 48-5                              |
| 48-26           | c             | p. 1044    | Table 48-6                              |
| 48-27           | d             | p. 1045    | Acute Renal Failure                     |
| 48-28           | d             | p. 1046    | Prevention                              |

## CHAPTER 49

# Gastrointestinal Disorders

- 49-1. Based on general experience, which of the following diagnostic studies are safe to use in pregnancy?
- Lower endoscopy
  - Flexible sigmoidoscopy
  - Endoscopic retrograde cholangiopancreatography (ERCP)
  - All of the above
- 49-2. All **EXCEPT** which of the following are common indications for nonobstetrical surgery in pregnancy?
- Appendicitis
  - Cholecystitis
  - Adnexal mass
  - Nephrolithiasis
- 49-3. Preference is given to which of the following when trying to maintain adequate nutrition in a pregnant patient with nausea/vomiting?
- Parenteral feeding
  - Hyperalimentation
  - Enteral alimentation
  - Dextrose-containing solutions
- 49-4. What is the incidence of laparotomy and laparoscopy for nonobstetric indications in pregnancy?
- 1:50
  - 1:100
  - 1:500
  - 1:1,000
- 49-5. When counseling a patient who needs nonobstetric surgery in pregnancy, which of the following should be disclosed?
- There is increased risk of stillbirth.
  - There is increased risk of cerebral palsy.
  - There is increased risk of preterm delivery.
  - There is no increase in long-term risks to the fetus or the mother.
- 49-6. Which of the following is the most common complication of total parenteral nutrition?
- Hemothorax
  - Catheter sepsis
  - Brachial plexus injury
  - Fetal subdural hematoma caused by vitamin K deficiency
- 49-7. What organism has been implicated as a causative organism in hyperemesis gravidarum?
- Helicobacter pylori*
  - Bacteroides fragilis*
  - Streptococcus viridans*
  - Clostridium difficile*
- 49-8. This endoscopic view shows which of the following?



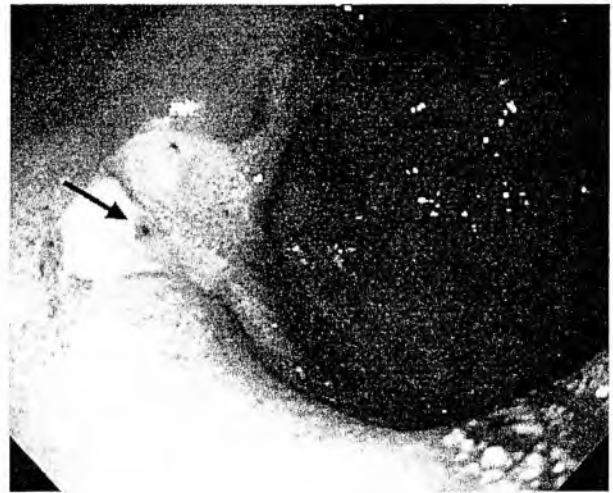
Reproduced, with permission, from Fauci AS, Braunwald E, Kasper DL: Harrison's Principles of Internal Medicine, 17th ed. New York, McGraw-Hill, 2008, Figure 285-18.

- H. pylori* infection
- Mallory-Weiss tear
- Barrett esophagus
- Inflammatory bowel disease



- 49-9. Which of the following is true of hyperemesis gravidarum?
- It is very common in pregnancy up until the 16th week of gestation.
  - It can cause weight loss, dehydration, and hypokalemia.
  - It is more likely to trigger hospitalization in obese patients.
  - It is more common if carrying a male fetus.
- 49-10. Wernicke encephalopathy is a life-threatening complication of recalcitrant hyperemesis gravidarum associated to a deficiency of which of the following?
- Thiamine
  - Vitamin K
  - $\beta$ -carotene
  - Phenylalanine
- 49-11. Which of the following is first-line treatment in the management of hyperemesis gravidarum?
- Glucocorticoids
  - Enteral nutrition
  - Ondansetron (Zofran)
  - IV hydration and antiemetics
- 49-12. Which vitamin deficiency is most commonly associated with hyperemesis gravidarum?
- Vitamin A
  - Vitamin D
  - Vitamin E and alanine
  - Vitamin K and thiamine
- 49-13. Which of the following is **NOT** safe to use in pregnancy for the treatment of reflux esophagitis?
- Cimetidine
  - Omeprazole
  - Misoprostol
  - Calcium carbonate
- 49-14. What is the hospital readmission rate in patients with hyperemesis gravidarum?
- 30%
  - 45%
  - 60%
  - 75%
- 49-15. What is the main mechanism behind the symptoms of reflux esophagitis in pregnancy?
- Decreased peristalsis
  - Excess gastric acid production
  - Relaxation of the upper esophageal sphincter
  - Relaxation of the lower esophageal sphincter

- 49-16. The complication seen in this gastric endoscopic image is uncommon in pregnancy for which of the following reasons?



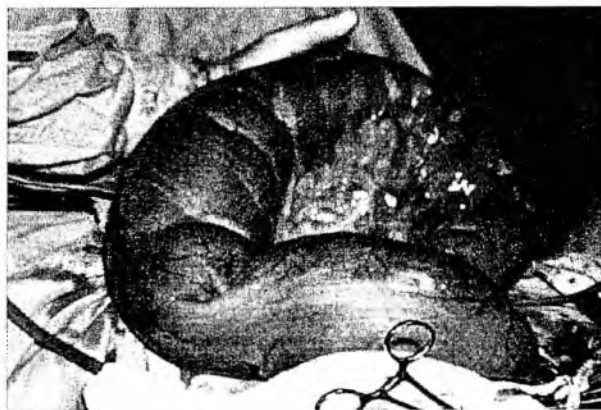
Reproduced, with permission, from Greenberger NJ, Blumberg RS, Burakoff R: Current Diagnosis & Treatment: Gastroenterology, Hepatology, & Endoscopy. New York, McGraw-Hill, 2009, Plate 51.

- H. pylori* infection is uncommon in pregnancy.
  - Gastric acid production is decreased in pregnancy.
  - Motility of the gastrointestinal tract is decreased in pregnancy.
  - All of the above.
- 49-17. All **EXCEPT** which of the following are adequate treatment choices for *H. pylori* in pregnancy?
- Amoxicillin
  - Tetracycline
  - Clarithromycin
  - Metronidazole
- 49-18. Ulcerative colitis and Crohn disease share all **EXCEPT** which of the following clinical features?
- Genetic predisposition
  - Cured by proctocolectomy
  - Periods of exacerbation and remission
  - Can be associated with erythema nodosum
- 49-19. Which is a clinical feature typical of Crohn disease?
- Rectum is usually spared.
  - Affected areas of bowel are contiguous.
  - It is associated with antineutrophil cytoplasm antibody.
  - Risk of cancer is greater than with ulcerative colitis.

- 49-20.** All **EXCEPT** which of the following are inflammatory bowel disease treatment options during pregnancy?
- Infliximab
  - Mesalamine
  - Methotrexate
  - Glucocorticoids
- 49-21.** Subfertility associated with inflammatory bowel disease may be linked to which of the following?
- Rectovaginal fistulas
  - Use of immune modulators as treatment
  - Sperm abnormalities caused by sulfasalazine
  - None of the above
- 49-22.** Which of the following statements is true about inflammatory bowel disease?
- Relapses are usually mild.
  - Pregnancy increases the likelihood of a flare.
  - Most treatments must be discontinued during pregnancy.
  - Active disease in early pregnancy increases the likelihood of poor pregnancy outcome.
- 49-23.** After proctocolectomy for the treatment of ulcerative colitis, which of the following are accurate counseling points?
- The patient can expect decreased fertility.
  - The patient should always be delivered by cesarean.
  - The patient can expect improved sexual function.
  - None of the above.
- 49-24.** Which of the following should be routinely supplemented in pregnant patients with inflammatory bowel disease?
- Calcium
  - Selenium
  - Chromium
  - Potassium
- 49-25.** During pregnancy and the puerperium, what is the most common cause of intestinal obstruction?
- Volvulus
  - Adhesions
  - Carcinoma
  - Intussusception

- 49-26.** What is the most common presentation of bowel obstruction in pregnancy?
- Diarrhea
  - Nausea and vomiting
  - Abnormal bowel sounds
  - Continuous or colicky abdominal pain

- 49-27.** This image shows which of the following?



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- Crohn disease
  - Intussusception
  - Colonic volvulus
  - Ulcerative colitis
- 49-28.** What is the approximate incidence of appendectomy in pregnancy?
- 1:500
  - 1:1,000
  - 1:5,000
  - 1:10,000
- 49-29.** Which of the following is the most commonly observed finding of appendicitis in pregnancy?
- Fever
  - Anorexia
  - Nausea and vomiting
  - Persistent abdominal pain and tenderness

- 49-30. Which of the following diagnostic methods provides the lowest negative appendectomy rate?
- a. Computed tomography (CT)
  - b. Magnetic resonance imaging (MRI)
  - c. Sonography and CT
  - d. Sonography and MRI
- 49-31. Regarding the complication shown here, which of the following is true?
- a. The risk of spontaneous abortions is increased.
  - b. Surgical evaluation is best postponed until the second trimester.
  - c. Accuracy of diagnosis improves with increasing gestational age.
  - d. Tocolytics decrease the risk of preterm labor associated with this complication.



Reproduced from I Pedrosa, D Levine, AD Eyvazzadeh, et al: MR imaging evaluation in pregnancy, *Radiology*, 2006;238:891-899, with permission from The Radiological Society of North America and Dr. Ivan Pedrosa.

## Chapter 49 Answer Key

| Question number | Letter answer | Page cited | Header cited                                   | Question number | Letter answer | Page cited | Header cited                                |
|-----------------|---------------|------------|------------------------------------------------|-----------------|---------------|------------|---------------------------------------------|
| 49-1            | d             | p. 1049    | General Considerations/<br>Endoscopy           | 49-17           | b             | p. 1053    | Peptic Ulcer/Management                     |
| 49-2            | d             | p. 1050    | Laparotomy and Laparoscopy                     | 49-18           | b             | p. 1054    | Table 49-3                                  |
| 49-3            | c             | p. 1050    | Nutritional Support                            | 49-19           | a             | p. 1055    | Crohn Disease                               |
| 49-4            | c             | p. 1050    | Laparotomy and Laparoscopy                     | 49-20           | c             | p. 1055    | Inflammatory Bowel<br>Disease/Management    |
| 49-5            | d             | p. 1050    | Laparotomy and Laparoscopy                     | 49-21           | c             | p. 1055    | Inflammatory Bowel Disease<br>and Fertility |
| 49-6            | b             | p. 1050    | Parenteral Nutrition During<br>Pregnancy       | 49-22           | d             | p. 1055    | Inflammatory Bowel Disease<br>and Pregnancy |
| 49-7            | a             | p. 1051    | Hyperemesis Gravidarum/<br>H. pylori Infection | 49-23           | c             | p. 1056    | Ulcerative Colitis and<br>Pregnancy         |
| 49-8            | b             | p. 1051    | Hyperemesis Gravidarum/<br>Complications       | 49-24           | a             | p. 1056    | UC/Crohn Disease and<br>Pregnancy           |
| 49-9            | b             | p. 1050    | Hyperemesis Gravidarum                         | 49-25           | b             | p. 1057    | Intestinal Obstruction and<br>Table 49-4    |
| 49-10           | a             | p. 1051    | Hyperemesis Gravidarum                         | 49-26           | d             | p. 1057    | Intestinal Obstruction/<br>Etiopathogenesis |
| 49-11           | d             | p. 1052    | Hyperemesis Gravidarum/<br>Management          | 49-27           | c             | p. 1057    | Figure 49-2                                 |
| 49-12           | d             | p. 1051    | Hyperemesis Gravidarum/<br>Complications       | 49-28           | b             | p. 1058    | Appendicitis                                |
| 49-13           | c             | p. 1052    | Reflux Esophagitis                             | 49-29           | d             | p. 1058    | Appendicitis/Diagnosis                      |
| 49-14           | a             | p. 1052    | Hyperemesis Gravidarum/<br>Management          | 49-30           | c             | p. 1059    | Appendicitis/Diagnosis                      |
| 49-15           | d             | p. 1052    | Reflux Esophagitis                             | 49-31           | a             | p. 1059    | Appendicitis/Management                     |
| 49-16           | d             | p. 1053    | Peptic Ulcer                                   |                 |               |            |                                             |

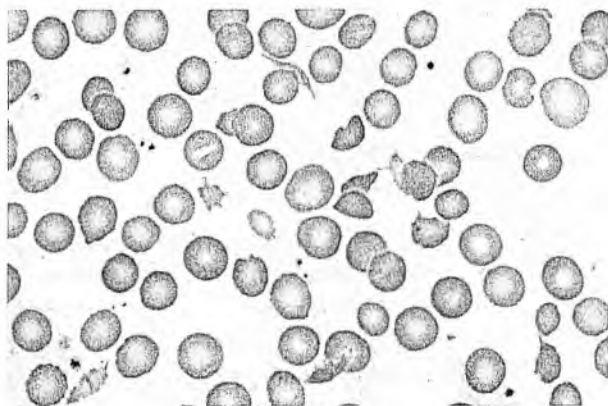
**CHAPTER 50****Hepatic, Gallbladder, and Pancreatic Disorders**

- 50-1.** Of the following findings that can be associated with liver dysfunction, which is a normal physiologic change in pregnancy?
- a. Elevation of hepatic transaminases
  - b. Spider angiomas
  - c. Esophageal varices
  - d. Asterixis
- 50-2.** A known risk factor for intrahepatic cholestasis of pregnancy may include which of the following?
- a. Twin pregnancies
  - b. Women of Italian descent
  - c. Certain specific gene mutations
  - d. All of the above
- 50-3.** Which of the following clinical features are characteristic of intrahepatic cholestasis?
- a. Serum transaminases  $\geq 500$  U/L
  - b. Maculopapular rash
  - c. Generalized pruritus
  - d. Nausea and vomiting
- 50-4.** Which of the following chronic viral infections has been associated with a marked increased risk for cholestasis of pregnancy?
- a. Hepatitis B
  - b. Hepatitis C
  - c. Human immunodeficiency virus (HIV)
  - d. Cytomegalovirus (CMV)
- 50-5.** Liver biopsy in women who suffer from cholestasis of pregnancy would be expected to show which of the following findings?
- a. Bile plugs in hepatocytes
  - b. Inflammatory changes
  - c. Periportal necrosis
  - d. All of the above
- 50-6.** Which of the following is the safest and most effective treatment for cholestasis of pregnancy?
- a. Ursodeoxycholic acid
  - b. Benadryl
  - c. Topical emollients
  - d. Plasmapheresis
- 50-7.** Mutations in enzymes involved in fatty acid oxidation have been classically associated with maternal acute fatty liver of pregnancy when they occur in what pattern?
- a. Homozygous mutation in the fetus and the mother
  - b. Homozygous mutation in the fetus; heterozygous mutation in the mother
  - c. Heterozygous mutation in the fetus and the mother
  - d. Heterozygous mutation in the fetus; homozygous mutation in the mother
- 50-8.** All **EXCEPT** which of the following are clinical characteristics that increase the risk for acute fatty liver of pregnancy?
- a. Nulliparity
  - b. Third trimester
  - c. Female fetus
  - d. Twin gestation

The following case applies to Questions 50–9 through 50–11.

A 33-year-old G2P1 presents at 35 weeks' gestation with complaints of nausea and vomiting. Laboratory analysis reveals elevated transaminases and creatinine levels and coagulopathy. A peripheral smear is performed with the results shown.

- 50–9. What is the underlying etiology of these hemolyzed cells found on the blood smear in this patient?

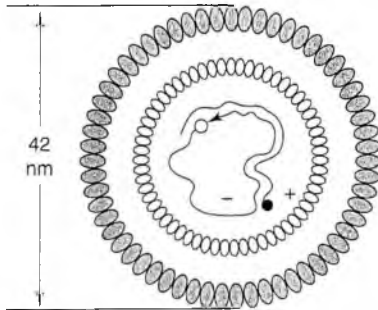


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- a. Increased destruction in the spleen
  - b. Intense vasospasm
  - c. Occlusive pain crisis
  - d. Decreased cholesterol production
- 50–10. As a part of the evaluation, you want to confirm the suspected diagnosis with imaging. Which of the following modalities is most appropriate?
- a. Sonography
  - b. Computed tomography
  - c. Magnetic resonance imaging
  - d. None of the above
- 50–11. After you stabilize the patient and correct her coagulopathy, you induce labor and she has a vaginal delivery. On postpartum day 2, she appears to be doing well, but you notice that her urine output has increased to approximately 800 cc per hour. What is the most likely cause of this condition?
- a. Hypothalamic dysfunction
  - b. Elevated serum vasopressinase concentrations
  - c. Acute tubular necrosis
  - d. Pituitary tumor
- 50–12. Postpartum acute pancreatitis occurs in up to what percentage of women who have acute fatty liver of pregnancy?
- a. 10%
  - b. 25%
  - c. 50%
  - d. 75%
- 50–13. All **EXCEPT** which of the following acute liver diseases of pregnancy can be associated with thrombocytopenia?
- a. Viral hepatitis
  - b. Preeclampsia
  - c. Acute fatty liver of pregnancy
  - d. Cholestasis of pregnancy
- 50–14. When associated with acute viral hepatitis, all **EXCEPT** which of the following symptoms and signs are indications of severe disease and should prompt hospitalization?
- a. Hyperglycemia
  - b. Coagulopathy
  - c. Hypoalbuminemia
  - d. Central nervous system symptoms
- 50–15. Acute hepatitis that progresses to fulminant hepatic necrosis is most likely to be caused by which of the following viruses?
- a. Hepatitis A virus
  - b. Hepatitis B virus
  - c. Hepatitis E virus
  - d. Any of the above
- 50–16. What is the most common complication of hepatitis B infection?
- a. Hepatocellular carcinoma
  - b. Esophageal varices
  - c. Chronic infection
  - d. Cirrhosis
- 50–17. In patients who require interferon pharmacotherapy for treatment of chronic hepatitis, what is the approximate cure rate?
- a. 5–10%
  - b. 10–20%
  - c. 30–40%
  - d. 60–70%

- 50-18. What is the primary route of transmission for the hepatitis A virus?
- Fecal-oral
  - Respiratory droplets
  - Sexual
  - Injection drug use

- 50-19. If the genetic makeup of the viral particle shown in this sketch is DNA, which type of hepatitis virus is represented here?



Reproduced, with permission, from Ryan K, et al: Sherris Medical Microbiology, 3rd ed. Appleton and Lange, 1994, Figure 41-1.

- Hepatitis A
  - Hepatitis B
  - Hepatitis C
  - Hepatitis E
- 50-20. After infection with hepatitis B, what is the first detectable serological marker?
- HBe antigen
  - IgM anti-HB core
  - HBs antigen
  - Anti-HBs
- 50-21. Approximately what percentage of infants who contract hepatitis B will become chronically infected?
- 15%
  - 30%
  - 50%
  - 85%
- 50-22. What adverse effects does infection with hepatitis C have on pregnant women?
- Increased progression to cirrhosis
  - Higher average serum transaminase levels
  - More fetal-growth restriction
  - None of the above

- 50-23. In the general population, what is the most common cause of the type of liver injury seen here?



Reproduced, with permission, from Brunicaudi FC, Anderson DK, Billiar TR, et al: Schwartz's Principles of Surgery, 9th ed. New York, McGraw-Hill, 2010, Figure 11-21.

- Alcohol exposure
  - Hepatitis B
  - Autoimmune hepatitis
  - Steatohepatitis
- 50-24. A 43-year-old G5P4 at 30 weeks' gestation presents complaining of hematemesis. An emergent upper endoscopy is performed with the findings of this study depicted in the image. If this condition is present in pregnancy, which of the following associated conditions would most increase her mortality risk?

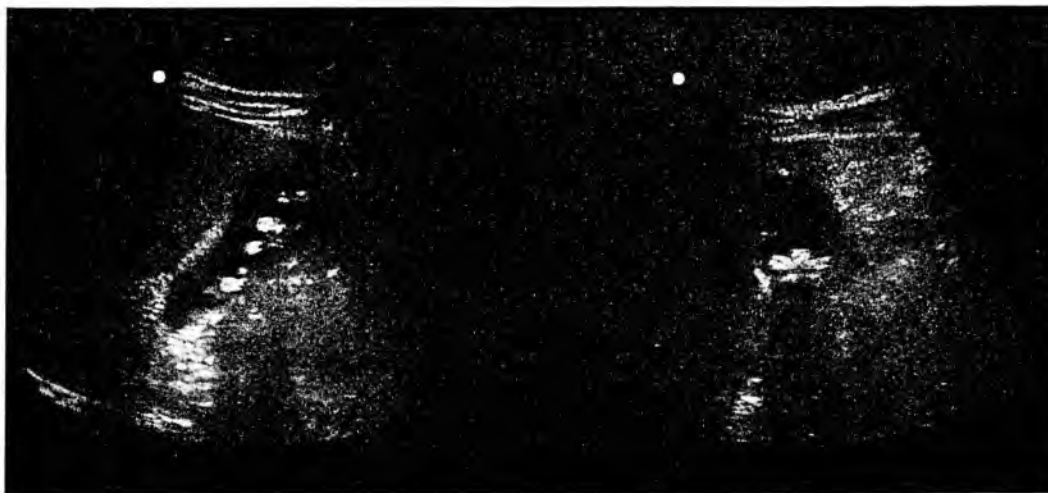


Reproduced, with permission, from Fauci AS, Braunwald E, Kasper DL: Harrison's Principles of Internal Medicine, 17th ed. New York, McGraw-Hill, 2008, Figure 285-16.

- HIV infection
- Cirrhosis
- Twin pregnancy
- Preeclampsia

**50-25.** A 31-year-old G2P1 at 20 weeks' gestation presents complaining of vomiting, fever, and right upper-quadrant pain. An examination reveals right upper-quadrant tenderness. Upper abdominal sonography is performed with the results depicted in the image. What is the most appropriate next management step?

- a. Discharge home with oral antibiotics
- b. Admission for serial abdominal examinations and intravenous antibiotics
- c. Endoscopic retrograde cholangiopancreatography
- d. Cholecystectomy



Reproduced, with permission, from Knoop KJ, Stack LB, Storz AB, et al: *Atlas of Emergency Medicine*, 3rd ed. New York, McGraw-Hill, 2010. Figure 24.46. Photo contributor: Stephen J. Leech, MD, RDMS.



**Chapter 50 Answer Key**

| Question number | Letter answer | Page cited | Header cited      |
|-----------------|---------------|------------|-------------------|
| <b>50-1</b>     | <b>b</b>      | p. 1063    | Hepatic Disorders |
| <b>50-2</b>     | <b>d</b>      | p. 1063    | Hepatic Disorders |
| <b>50-3</b>     | <b>c</b>      | p. 1064    | Hepatic Disorders |
| <b>50-4</b>     | <b>b</b>      | p. 1064    | Hepatic Disorders |
| <b>50-5</b>     | <b>a</b>      | p. 1064    | Hepatic Disorders |
| <b>50-6</b>     | <b>a</b>      | p. 1064    | Hepatic Disorders |
| <b>50-7</b>     | <b>b</b>      | p. 1065    | Hepatic Disorders |
| <b>50-8</b>     | <b>c</b>      | p. 1066    | Hepatic Disorders |
| <b>50-9</b>     | <b>d</b>      | p. 1066    | Hepatic Disorders |
| <b>50-10</b>    | <b>d</b>      | p. 1066    | Hepatic Disorders |
| <b>50-11</b>    | <b>b</b>      | p. 1067    | Hepatic Disorders |
| <b>50-12</b>    | <b>c</b>      | p. 1067    | Hepatic Disorders |
| <b>50-13</b>    | <b>d</b>      | p. 1064    | Table 50-1        |

| Question number | Letter answer | Page cited | Header cited          |
|-----------------|---------------|------------|-----------------------|
| <b>50-14</b>    | <b>a</b>      | p. 1067    | Hepatic Disorders     |
| <b>50-15</b>    | <b>b</b>      | p. 1067    | Hepatic Disorders     |
| <b>50-16</b>    | <b>c</b>      | p. 1068    | Hepatic Disorders     |
| <b>50-17</b>    | <b>c</b>      | p. 1068    | Hepatic Disorders     |
| <b>50-18</b>    | <b>a</b>      | p. 1069    | Hepatic Disorders     |
| <b>50-19</b>    | <b>b</b>      | p. 1069    | Hepatic Disorders     |
| <b>50-20</b>    | <b>c</b>      | p. 1069    | Hepatic Disorders     |
| <b>50-21</b>    | <b>d</b>      | p. 1070    | Hepatic Disorders     |
| <b>50-22</b>    | <b>d</b>      | p. 1071    | Hepatic Disorders     |
| <b>50-23</b>    | <b>a</b>      | p. 1072    | Hepatic Disorders     |
| <b>50-24</b>    | <b>b</b>      | p. 1072    | Hepatic Disorders     |
| <b>50-25</b>    | <b>d</b>      | p. 1074    | Gallbladder Disorders |

## CHAPTER 51

# Hematological Disorders

- 51-1.** Anemia in pregnancy or the puerperium is defined as a hemoglobin concentration of less than what value?
- 14 g/dL
  - 12 g/dL
  - 10 g/dL
  - 8 g/dL
- 51-2.** At what point is the proportion of plasma expansion to red cell expansion maximal?
- First trimester
  - Second trimester
  - Third trimester
  - Puerperium
- 51-3.** Of the 1,000 mg of iron needed for a typical singleton pregnancy, how much does the fetus require?
- 100 mg
  - 300 mg
  - 500 mg
  - 700 mg
- 51-4.** It can be anticipated that a neonate born to a mother with severe iron-deficiency anemia will have what hematological findings?
- Normal hemoglobin count
  - Iron-deficiency anemia
  - Reactive polycythemia
  - Pancytopenia
- 51-5.** A 34-year-old G3P2 presents at 30 weeks' gestation to enroll for prenatal care and complains of frequent fatigue. Routine prenatal laboratory tests reveal a hemoglobin concentration of 8 g/dL. A peripheral smear and red cell indices are consistent with hypochromic, microcytic cell changes. What is the most appropriate next step in management?
- Transfusion with packed red cells
  - Supplemental iron given intravenously
  - Supplemental iron given orally
  - Recombinant erythropoietin
- 51-6.** In a hemodynamically stable postpartum woman with acute blood loss anemia, transfusions are generally not indicated as long as the hemoglobin is at least at what level?
- 4 g/dL
  - 5 g/dL
  - 6 g/dL
  - 7 g/dL
- 51-7.** Women who are treated with recombinant erythropoietin for anemia associated with chronic renal disease must be closely monitored for what side effect?
- Weight loss
  - Hypertension
  - Hyperglycemia
  - Hyponatremia
- 51-8.** What is the first sign of folic acid deficiency?
- Low plasma folate levels
  - Hypersegmented neutrophils
  - Nucleated red cells
  - Macrocytosis
- 51-9.** According to recommendations by the American College of Obstetricians and Gynecologists, women of childbearing age should consume at least how much folic acid daily?
- 40 mg
  - 4 mg
  - 0.4 mg
  - 0.04 mg
- 51-10.** What is the mainstay of treatment for autoimmune hemolytic anemia?
- Simple transfusion
  - Exchange transfusion
  - Hydroxyurea
  - Corticosteroids

*The following clinical scenario applies to Questions 51–11 and 51–12.*

A 23-year-old primigravida at 16 weeks' gestation presents complaining of fatigue, increased nausea and vomiting, and "yellow eyes." The blood counts reveal severe anemia, and a peripheral blood smear is consistent with spherocytosis.

- 51–11.** This disorder is most commonly caused by a mutation in which of the following genes?
- $\beta$ -Globin gene
  - $\alpha$ -Globin gene
  - Spectrin
  - Methylene tetrahydrofolate reductase
- 51–12.** What additional test could be ordered to confirm the diagnosis?
- Hemoglobin electrophoresis
  - Osmotic fragility testing
  - Indirect Coomb's test
  - Total iron binding capacity
- 51–13.** What is the mode of inheritance for glucose-6-phosphate dehydrogenase deficiency?
- Autosomal recessive
  - Autosomal dominant
  - X-linked
  - Mitochondrial
- 51–14.** A 22-year-old primigravida presents at 34 weeks' gestation with complaints of fever for 3 days. Physical examination is significant only for diffuse petechiae, and laboratory studies reveal pancytopenia. A bone marrow biopsy is performed, and a less than 25% cellularity is found. What is the maternal mortality in this setting?
- 10%
  - 25%
  - 50%
  - 75%

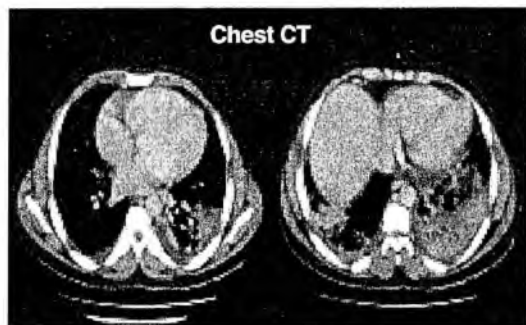
- 51–15.** In affected patients, red cells may assume the configuration seen in this photograph under what conditions?



Reproduced, with permission, from Hall JB, Schmidt GA, Wood LDH: *Principles of Critical Care*, 3rd ed. New York, McGraw-Hill, 2005, Figure 108-4.

- Low-oxygen tension
  - Dietary deficiency
  - Administration of certain antibiotics
  - Hyperglycemia
- 51–16.** What is the approximate incidence of sickle cell anemia—an autosomal recessive disease—in African Americans if the carrier rate is 1/12?
- 1/25
  - 1/150
  - 1/300
  - 1/600

- 51-17.** An 18-year-old primigravida with known sickle cell disease presents at 19 weeks' gestation with complaints of fever, shortness of breath, and chest pain. A pulmonary consolidation is suspected by chest radiograph, and a CT scan of the chest is obtained with the results shown. Which of the following can precipitate this condition?



Reproduced, with permission, from Hall JB, Schmidt GA, Wood LDH: Principles of Critical Care, 3rd ed. New York, McGraw-Hill, 2005, Figure 108-4.

- a. Infection
  - b. Bone marrow emboli
  - c. Atelectasis
  - d. All of the above
- 51-18.** Pregnant women with sickle cell anemia require additional supplementation with which of the following?
- a. Vitamin B<sub>12</sub>
  - b. Folate
  - c. Vitamin D
  - d. Calcium
- 51-19.** A 22-year-old G3P2 with sickle cell anemia presents with 2 days of worsening bone pain that is typical of her past crises. A complete blood count reveals hemoglobin of 6.5 g/dL. Transfusion with red cells at this point will achieve what goal?
- a. Decrease duration of the acute pain crisis
  - b. Improve her pain symptoms
  - c. Increase blood count
  - d. All of the above
- 51-20.** Which of the following contraceptive choices may help prevent painful crises in women with sickle cell disease?
- a. Combination oral contraceptives
  - b. Depot medroxyprogesterone acetate
  - c. Intrauterine device
  - d. Bilateral tubal ligation

- 51-21.** Sickle cell trait (hemoglobin AS) has been associated with an increased risk for which of the following?
- a. Urinary tract infections
  - b. Fetal-growth restriction
  - c. Placental abruption
  - d. Preeclampsia

- 51-22.** A 25-year-old Asian primigravida undergoes sonographic examination at 28 weeks' gestation. This image of the fetal abdomen is obtained. Amniocentesis is performed and sent for analysis of the  $\alpha$ -globin gene. What is the expected genotype of this fetus?



Reproduced, with permission, from Cunningham FG, Leveno KJ, Bloom SL, et al: Williams Obstetrics, 23rd ed. New York, McGraw-Hill, 2010.

- a.  $\alpha\alpha/-\alpha$
  - b.  $\alpha-/-\alpha$
  - c.  $--/-\alpha$
  - d.  $--/--$
- 51-23.** Which of the following findings on hemoglobin electrophoresis would be most consistent with a diagnosis of  $\beta$ -thalassemia minor?
- a. Hemoglobin A2 greater than 3.5%; normal fetal hemoglobin level
  - b. Hemoglobin A2 greater than 3.5%; fetal hemoglobin greater than 2%
  - c. Hemoglobin A2 less than 1%; normal fetal hemoglobin level
  - d. Hemoglobin A2 less than 1%; fetal hemoglobin greater than 2%

- 51-24.** What is the initial treatment of women with immune thrombocytopenia in pregnancy when therapy is indicated?
- a. Azathioprine
  - b. Intravenous immunoglobulin
  - c. Prednisone
  - d. Splenectomy
- 51-25.** Pregnancy outcomes are generally good in women who have von Willebrand disease. Which of the following pregnancy-related complications may be encountered in up to 50% of such cases?
- a. Placental abruption
  - b. Fetal growth restriction
  - c. Preterm birth
  - d. Postpartum hemorrhage

## Chapter 51 Answer Key

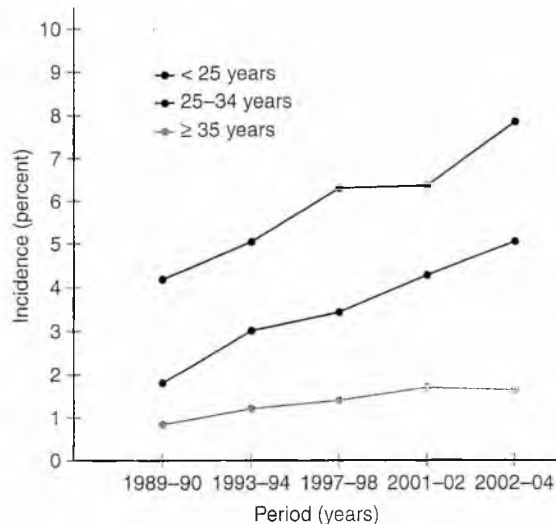
| Question number | Letter answer | Page cited | Header cited |
|-----------------|---------------|------------|--------------|
| 51-1            | c             | p. 1079    | Anemias      |
| 51-2            | b             | p. 1079    | Anemias      |
| 51-3            | b             | p. 1080    | Anemias      |
| 51-4            | a             | p. 1080    | Anemias      |
| 51-5            | c             | p. 1081    | Anemias      |
| 51-6            | d             | p. 1081    | Anemias      |
| 51-7            | b             | p. 1082    | Anemias      |
| 51-8            | a             | p. 1082    | Anemias      |
| 51-9            | c             | p. 1082    | Anemias      |
| 51-10           | d             | p. 1083    | Anemias      |
| 51-11           | c             | p. 1084    | Anemias      |
| 51-12           | b             | p. 1084    | Anemias      |
| 51-13           | c             | p. 1084    | Anemias      |

| Question number | Letter answer | Page cited | Header cited                  |
|-----------------|---------------|------------|-------------------------------|
| 51-14           | c             | p. 1085    | Anemias                       |
| 51-15           | a             | p. 1085    | Hemoglobinopathies            |
| 51-16           | d             | p. 1086    | Hemoglobinopathies            |
| 51-17           | d             | p. 1086    | Hemoglobinopathies            |
| 51-18           | b             | p. 1087    | Hemoglobinopathies            |
| 51-19           | c             | p. 1087    | Hemoglobinopathies            |
| 51-20           | b             | p. 1089    | Hemoglobinopathies            |
| 51-21           | a             | p. 1089    | Hemoglobinopathies            |
| 51-22           | d             | p. 1091    | Hemoglobinopathies            |
| 51-23           | b             | p. 1092    | Hemoglobinopathies            |
| 51-24           | c             | p. 1094    | Platelet Disorders            |
| 51-25           | d             | p. 1098    | Inherited Coagulation Defects |

## CHAPTER 52

# Diabetes

- 52-1.** The age-adjusted prevalence of diabetes complicating pregnancy has increased from 14.5/1,000 in 1991 to what value in 2003?
- 20/1,000
  - 32.3/1,000
  - 47.9/1,000
  - 75.2/1,000
- 52-2.** Imprinting of the fetus in the diabetic mother suggests that exposure to hyperglycemia leads to hyperinsulinemia, causing an increase in which fetal cell type and leading to obesity and insulin resistance in childhood?
- Pancreatic  $\beta$ -cells
  - Adrenal zona fasciculata cells
  - Adipocytes
  - Pituitary somatotrophs
- 52-3.** According to the image shown here, the sharpest increase in the age-specific incidence of gestational diabetes occurred in what age group between 2001 and 2004?
- 52-4.** At and above what fasting plasma glucose level is overt diabetes diagnosed?
- 105 mg/dL
  - 116 mg/dL
  - 126 mg/dL
  - 140 mg/dL
- 52-5.** When screening for gestational diabetes with a 50 g oral glucose challenge test, what minimum threshold value is used to identify women needing to undergo further testing?
- 165 mg/dL
  - 160 mg/dL
  - 155 mg/dL
  - 140 mg/dL



Reprinted from American Journal of Obstetrics & Gynecology, Vol. 198, No. 5, D Getahun, C Nath, CV Ananth, et al: Gestational diabetes in the United States: Temporal trends 1989 through 2004, pp. 525.e1-525.e5, © 2008, with permission from Elsevier.

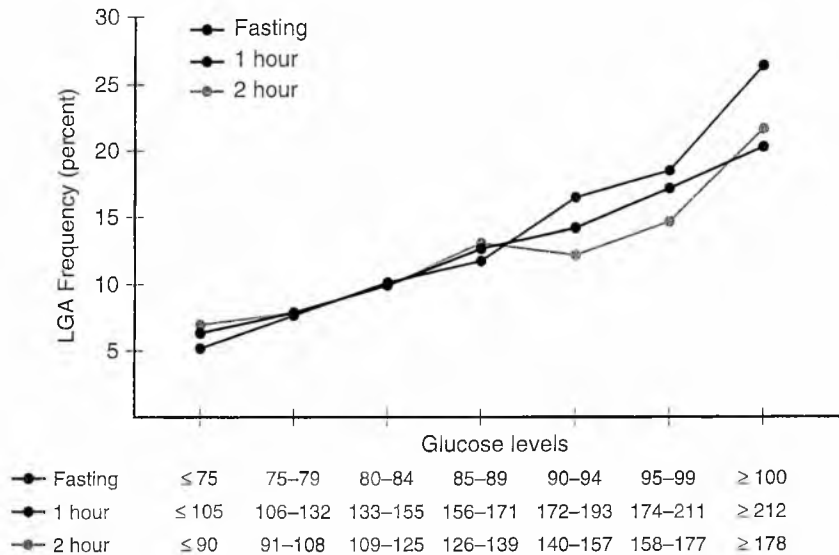
- <25 years
- 25-34 years
- ≥35 years
- None of the above

**52-6.** Results shown below from the Hyperglycemia and Adverse Pregnancy Outcome (HAPO) study suggest which of the following?

- a. There is a threshold level of fasting glucose above which fetal morbidity rates increases.
- b. Primary cesarean delivery rates are increased when maternal fasting glucose is less than 90 mg/dL.
- c. Increasing plasma glucose levels at each epoch are associated with increasing adverse outcome rates.
- d. We should lower our threshold for diagnosis and treatment of gestational diabetes.

**52-9.** Which of the following is true of oral hypoglycemic agent use?

- a. An excellent substitute for insulin in all insulin-resistant gestational diabetics
- b. Inadequate in women with fasting glucose levels >110 mg/dL
- c. Often associated with the need for supplemental insulin
- d. Recommended by the American College of Obstetricians and Gynecologists for gestational diabetes treatment



Adapted from The HAPO Study Cooperative Research Group: Hyperglycemia and adverse pregnancy outcomes. *N Engl J Med* 358(19):1991–2002, with permission. © 2008 Massachusetts Medical Society. All rights reserved.

**52-7.** What is the percentage of A1 gestational diabetics that have shoulder dystocia?

- a. 0.1%
- b. 0.3%
- c. 3%
- d. 10%

**52-8.** Which of the following is true regarding women using daily self glucose monitoring compared with those using intermittent semiweekly monitoring at clinic visits?

- a. Equal risk of macrosomic infants
- b. Gained more weight after diagnosis
- c. Gained less weight after diagnosis
- d. Had a higher risk of delivering a macrosomic infant

**52-10.** In women with A1 gestational diabetes, which of the following is true?

- a. Elective cesarean delivery for sonographically estimated fetal weights (EFW)  $\geq 4,500$  g has lowered rates of brachial plexus injury.
- b. Elective induction with suspected macrosomia rather than awaiting spontaneous labor does not reduce shoulder dystocia rates.
- c. Sonographic suspicion of shoulder dystocia is acceptably accurate.
- d. None of the above.

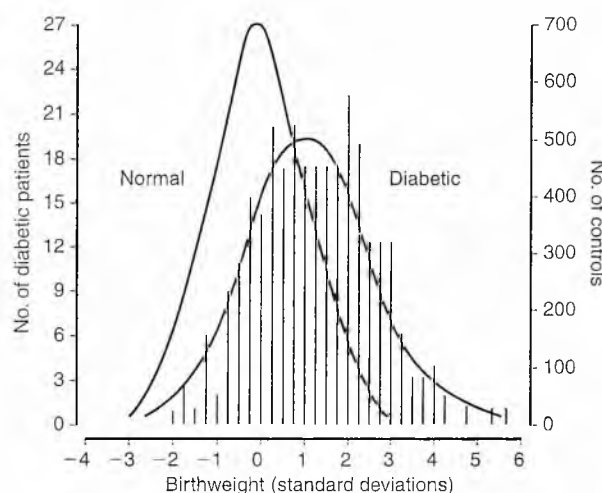
**52-11.** A history of gestational diabetes increases the risk of developing which of the following?

- a. Overt diabetes
- b. Hypertension
- c. Dyslipidemia
- d. All of the above



- 52-12.** What is the rate of stillbirth in pregestational diabetics?
- 0.4%
  - 1.0%
  - 1.5%
  - 2.0%
- 52-13.** In women with overt diabetes, one supported hypothesis for unexplained fetal demise suggests which of the following?
- Accelerated placental senescence
  - Umbilical cord edema that constricts cord blood flow
  - Maternal hyperglycemia that leads to osmotically induced villous edema
  - Umbilical vein thrombosis
- 52-14.** What are the two main causes of fetal death in women with type I diabetes?
- Respiratory distress syndrome (RDS) and unexplained fetal demise
  - Unexplained fetal demise and congenital malformations
  - Unexplained fetal demise and uteroplacental insufficiency
  - Congenital malformations and placental abruption
- 52-15.** Proven causes for hydramnios in diabetic pregnancies include which of the following?
- Increased amniotic fluid glucose concentration
  - Fetal polyuria
  - Fetal esophageal atresia
  - None of the above

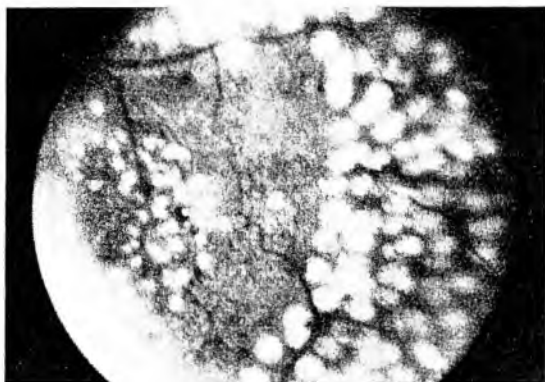
- 52-16.** This image concerning birthweight distribution illustrates which of the following?



From Bradley and co-workers, 1988; redrawn from British Medical Journal, 1988, Vol. 297, No. 6663, pp. 1583–1584, with permission from the BMJ Publishing Group.

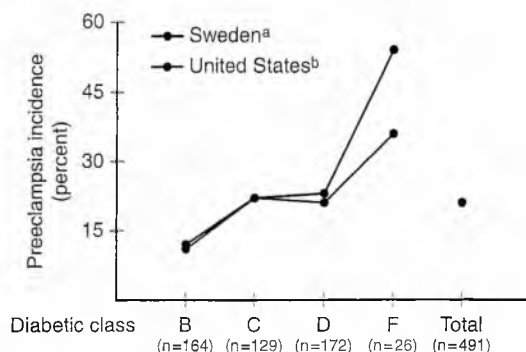
- Infants of diabetic mothers are “growth promoted.”
  - Growth promotion from maternal hyperglycemia does not preclude fetal growth restriction as defined by  $-2$  standard deviations below the mean.
  - The birthweight distribution of infants of diabetic mothers is skewed toward consistently heavier birthweights.
  - All of the above.
- 52-17.** Which of the following neonatal morbidities are related to maternal hyperglycemia?
- Respiratory distress syndrome
  - Hypoglycemia
  - Hyperbilirubinemia and polycythemia
  - All of the above
- 52-18.** Both mother and father of an infant have type I diabetes. What is the infant's chance of developing type I diabetes?
- 1–3%
  - 6%
  - 20%
  - None of the above
- 52-19.** Chronic hypertension with diabetic nephropathy is associated with what percent risk of developing preeclampsia?
- 20%
  - 40%
  - 60%
  - 80%

- 52-20.** In this image, proliferative retinopathy and the results of laser photocoagulation are shown. This procedure reduces the rate of vision loss progression and blindness by what percentage?



Reproduced, with permission, from Elman KD, Welch RA, Frank RN, et al: Diabetic retinopathy in pregnancy: A review. *Obstet Gynecol* 75:119, 1990.

- a. 20%
  - b. 50%
  - c. 75%
  - d. Is curative
- 52-21.** According to this image, which of the following is true?



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- a. Empiric risks of preeclampsia are related to the White classification.
  - b. Patients with Class F diabetes in Sweden have similar risks for preeclampsia as those in the United States.
  - c. The lowest risk of preeclampsia is in patients with Class C diabetes.
  - d. All of the above.
- 52-22.** What is the incidence of fetal loss with ketoacidosis during pregnancy?
- a. 5%
  - b. 15%
  - c. 20%
  - d. 30%
- 52-23.** What percentage of women with diabetes have infections during pregnancy?
- a. 25%
  - b. 40%
  - c. 60%
  - d. 80%
- 52-24.** The American Diabetes Association (ADA) considers optimum preconceptional glucose levels to include which of the following self-monitored values?
- a. Preprandial glucose levels 70–100 mg/dL
  - b. 2-hour postprandial levels <120 mg/dL
  - c. 1-hour postprandial levels <140 mg/dL
  - d. All of the above
- 52-25.** Self monitoring of capillary glucose levels using a glucometer is recommended for which of the following reasons?
- a. Insulin pumps increase the risk of hyperglycemia.
  - b. It involves a woman in her own care.
  - c. It is the only way to ensure oral hypoglycemic efficacy.
  - d. It decreases the number of necessary office visits.
- 52-26.** The ADA recommends what daily caloric intake for pregnant women with diabetes?
- a. 40 kcal/kg/d for normal-weight women
  - b. 30–35 kcal/kg/d for overweight women
  - c. 30–35 kcal/kg/d for normal-weight women
  - d. 24 kcal/kg/d for underweight women
- 52-27.** Good pregnancy outcomes can be achieved with mean plasma glucose levels as high as what value?
- a. 110 mg/dL
  - b. 121 mg/dL
  - c. 133 mg/dL
  - d. 143 mg/dL
- 52-28.** Which of the following is true of managing diabetic patients during the second trimester?
- a. Maternal serum alpha-fetoprotein (msAFP) should be obtained at 16–20 weeks.
  - b. Targeted sonography should be performed between 18 and 20 weeks.
  - c. A stable period of glycemic control ensues lasting until approximately 24 weeks.
  - d. All of the above.

**Chapter 52 Answer Key**

| Question number | Letter answer | Page cited | Header cited               |
|-----------------|---------------|------------|----------------------------|
| 52-1            | c             | p. 1104    | Introduction               |
| 52-2            | c             | p. 1104    | Introduction               |
| 52-3            | a             | p. 1105    | Figure 52-1                |
| 52-4            | c             | p. 1105    | Overt Diabetes             |
| 52-5            | d             | p. 1106    | Screening                  |
| 52-6            | c             | p. 1104    | Figure 52-2 and HAPO study |
| 52-7            | c             | p. 1109    | Macrosomia                 |
| 52-8            | c             | p. 1110    | Glucose Monitoring         |
| 52-9            | b             | p. 1111    | Oral Hypoglycemic Agents   |
| 52-10           | b             | p. 1111    | Obstetrical Management     |
| 52-11           | d             | p. 1112    | Postpartum Evaluation      |
| 52-12           | b             | p. 1113    | Table 52-7                 |
| 52-13           | c             | p. 1114    | Unexplained Fetal Demise   |
| 52-14           | b             | p. 1113    | Fetal Effects              |
| 52-15           | c             | p. 1115    | Hydramnios                 |

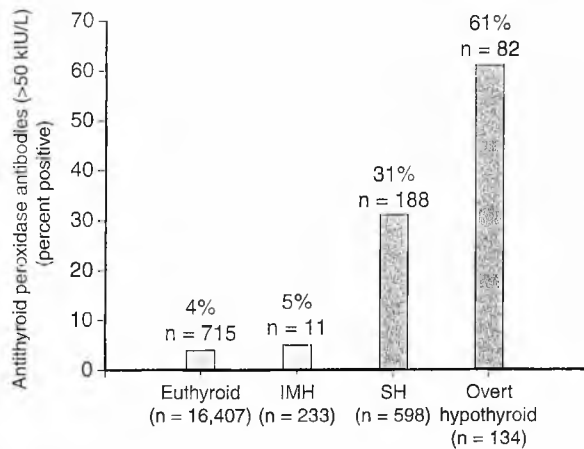
| Question number | Letter answer | Page cited | Header cited                         |
|-----------------|---------------|------------|--------------------------------------|
| 52-16           | d             | p. 1115    | Figure 52-5                          |
| 52-17           | b             | p. 1115    | Neonatal Mortality and Morbidity     |
| 52-18           | c             | p. 1116    | Inheritance of Diabetes              |
| 52-19           | c             | p. 1116    | Diabetic Nephropathy                 |
| 52-20           | b             | p. 1117    | Figure 52-4 and Diabetic Retinopathy |
| 52-21           | a             | p. 1113    | Figure 52-4                          |
| 52-22           | c             | p. 1118    | Diabetic Ketoacidosis                |
| 52-23           | d             | p. 1118    | Infections                           |
| 52-24           | d             | p. 1119    | Preconceptional Care                 |
| 52-25           | b             | p. 1119    | Insulin Treatment                    |
| 52-26           | c             | p. 1120    | Diet                                 |
| 52-27           | d             | p. 1120    | Hypoglycemia                         |
| 52-28           | d             | p. 1120    | Second Trimester                     |

## CHAPTER 53

# Thyroid and Endocrine Disorders

- 53-1.** Which of the following is true of thyroid-stimulating hormone (TSH) during pregnancy?
- Decreased levels early
  - Crosses the placenta and stimulates fetal thyroxine production
  - Increased levels early because of the effects of human chorionic gonadotropin (hCG)
  - None of the above
- 53-2.** Thyroid peroxidase antibodies are identified in approximately what percentage of pregnant women?
- 2%
  - 10%
  - 20%
  - 30%
- 53-3.** Symptomatic thyrotoxicosis or hyperthyroidism occurs in what percentage of pregnancies?
- 1%
  - 0.1%
  - 0.5%
  - 0.25%
- 53-4.** Complications from thionamides include which of the following?
- Agranulocytosis
  - Hepatotoxicity
  - Serious vasculitis
  - All of the above

- 53-5.** In this graph, what is the incidence of antithyroid peroxidase antibodies in women with subclinical hypothyroidism? (SH = subclinical hypothyroidism; IMH = isolated maternal hypothyroxinemia)



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- 4%
  - 5%
  - 31%
  - 61%
- 53-6.** What is the reported perinatal mortality rate associated with uncontrolled hyperthyroidism in pregnancy?
- 5%
  - 10%
  - 15%
  - 20%

**53-7.** This sonogram image illustrates what morbidity consistent with fetal thyrotoxicosis?



Reproduced, with permission, from Cunningham FG, Leveno KJ, Bloom SL, et al: *Williams Obstetrics*, 23rd ed. New York, McGraw-Hill, 2010.

- a. Hepatomegaly
  - b. Nonimmune hydrops
  - c. Fetal pleural effusion
  - d. All of the above
- 53-8.** When treating maternal thyroid storm with heart failure, which of the following is true?
- a. Initially, sodium iodide is administered and then continued every 8 hours.
  - b. If there is a history of iodine-induced anaphylaxis, Lugol solution is given every 6 hours.
  - c. Initially, 1 g of a thionamide is given by nasogastric tube.
  - d. Dexamethasone is contraindicated.
- 53-9.** Concerning gestational thyrotoxicosis, which of the following is true?
- a. It should be treated with low-dose thionamides.
  - b. There is abnormal massive thyrotropin release.
  - c. It should not be treated with antithyroid drugs.
  - d. None of the above.

**53-10.** Which of the following is true of the condition illustrated by this newborn, who was delivered by a mother with thyroid disease?



Reproduced, with permission, from Cunningham FG, Leveno KJ, Bloom SL, et al: *Williams Obstetrics*, 23rd ed. New York, McGraw-Hill, 2010.

- a. Goitrous hypothyroidism
  - b. A common adverse fetal effect of maternal propylthiouracil (PTU) treatment
  - c. Will not occur if the mother has had thyroid gland radioablation
  - d. A fetal arteriovenous malformation
- 53-11.** Subclinical hypothyroidism is characterized by which of the following?
- a. High serum thyroxine level
  - b. Low free thyroxine (FT<sub>4</sub>) level
  - c. High serum thyrotropin and normal FT<sub>4</sub> levels
  - d. Low serum thyrotropin level
- 53-12.** Which of the following is the most common cause of hypothyroidism in pregnancy?
- a. Graves disease
  - b. Paraneoplastic syndrome
  - c. Hashimoto thyroiditis
  - d. None of the above

- 53-13.** Concerning treatment of hypothyroidism, which of the following is true?
- Approximately 100 µg thyroxine should be given daily.
  - Thyrotropin levels should be measured at 4- to 6-week intervals.
  - The thyroxine dose should be adjusted in 25–50 µg increments to achieve TSH levels between 0.5 and 2.5 mU/L.
  - All of the above.
- 53-14.** Which of the following is true of routine thyrotropin screening in pregnancy?
- It is advocated by the American College of Obstetricians and Gynecologists.
  - It leads to improved outcome of neonates whose mothers have subclinical hypothyroidism.
  - It is not advocated by the American Association of Clinical Endocrinologists.
  - It should be performed on symptomatic women or those with a history of thyroid disease.
- 53-15.** Which of the following is true of isolated maternal hypothyroxinemia?
- It is characterized by high TSH and low FT<sub>4</sub> levels.
  - It has a similar prevalence of antithyroid antibodies as subclinical hypothyroidism.
  - In some women, it is associated with a twofold incidence of macrosomia.
  - It has no apparent serious adverse effects on pregnancy outcome.
- 53-16.** Which of the following is true of postpartum thyroiditis?
- It affects 5–10% of women during the first year postpartum.
  - It is related to increasing levels of thyroid autoantibodies.
  - It occurs in 25% of women with type I diabetes mellitus.
  - All of the above.
- 53-17.** Which of the following is true of thyroid nodules during pregnancy?
- When smaller than 0.5 cm, they can be detected by sonography.
  - They are not assessed properly with fine-needle aspiration.
  - If cancerous, they can confer a worse prognosis than if found in nonpregnant controls.
  - They can be safely removed before 24–26 weeks.
- 53-18.** Which of the following is true of 1,25-dihydroxy-vitamin D?
- Levels increase threefold during pregnancy.
  - It increases gastrointestinal calcium absorption.
  - It is mostly of maternal origin during pregnancy.
  - All of the above.
- 53-19.** Which of the following is true of hyperparathyroidism?
- It may be masked by pregnancy due to significant calcium shunting to the fetus.
  - It is caused mainly by hyperfunction of all four parathyroid glands.
  - It has a reported prevalence of 2–3 per 10,000 women.
  - It is generally a disease of young females.
- 53-20.** Of women with hyperparathyroidism in pregnancy, which of the following is true?
- If symptomatic, surgical removal of the parathyroid adenoma should be delayed until postpartum.
  - Asymptomatic women may be treated with oral phosphate, 1–1.5 g daily in divided doses.
  - If hypercalcemic crisis occurs, the patient should have fluids restricted.
  - Adjunctive therapy includes doxorubicin, which inhibits bone resorption.
- 53-21.** Which of the following is true of pheochromocytomas?
- They are found in 0.1% of hypertensive patients during pregnancy.
  - They are called the 10-percent tumor.
  - They are detected by a 24-hour urine collection for free catecholamines, metanephrines, or vanillyl-mandelic acid (VMA).
  - All of the above.

- 53-22. The patient whose magnetic resonance imaging (MRI) is shown here has a history of hypertension, palpitations, and frequent flushing episodes. The most likely diagnosis is which of the following?



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- a. Wilms tumor
  - b. Adrenal tumor
  - c. Renal medulloblastoma
  - d. Liver hepatoma
- 53-23. Which of the following is appropriate first-line medical therapy for hypertension with pheochromocytoma in pregnancy?
- a. Calcium-channel blockers
  - b.  $\beta$ -Blockers
  - c.  $\alpha$ -Blockers
  - d. Apresoline
- 53-24. Concerning Cushing syndrome, which of the following is true?
- a. Most common cause is adrenal adenoma.
  - b. Cases of corticotropin-dependent Cushing syndrome in pregnancy occur frequently.
  - c. Typical body habitus show moon facies, buffalo hump, and peripheral obesity.
  - d. Associated heart failure is rare during pregnancy.

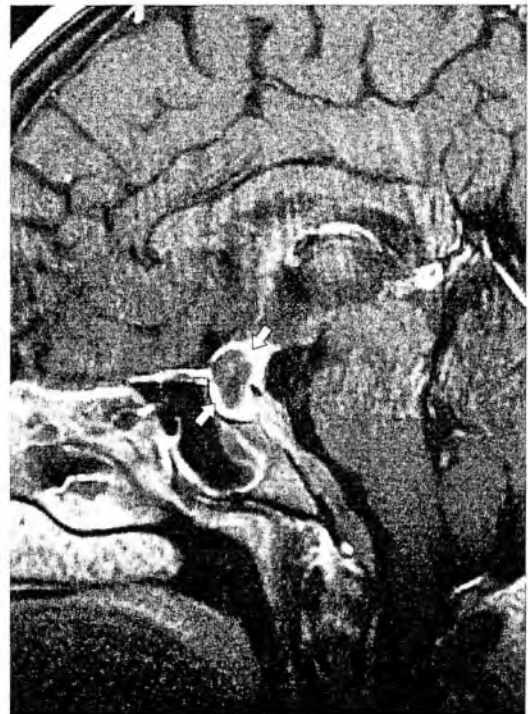
- 53-25. Concerning Addison disease, which of the following is true?

- a. The most frequent cause is tuberculosis.
- b. Adrenal hypofunction does not usually affect fertility.
- c. Low cortisol levels should prompt adrenocorticotropic hormone stimulation testing.
- d. Cortisone therapy may be discontinued postpartum.

- 53-26. Concerning prolactinomas, which of the following is true?

- a. They are classified by location.
- b. They are considered macroadenomas if larger than 5 mm.
- c. They are treated with bromocriptine if smaller than 10 mm.
- d. They should be surgically resected prior to pregnancy if suprasellar and  $> 10$  mm.

- 53-27. This MRI illustrates which of the following?



Reproduced, with permission, from Cunningham FG, Leveno KJ, Bloom SL, et al: *Williams Obstetrics*, 23rd ed. New York, McGraw-Hill, 2010.

- a. Suprasellar tumor
- b. Sequelae of an acute hemorrhagic obstetric event
- c. A condition that may lead to chronic hypertension
- d. A condition that responds to bromocriptine

**Chapter 53 Answer Key**

| Question number | Letter answer | Page cited | Header cited                                          |
|-----------------|---------------|------------|-------------------------------------------------------|
| <b>53-1</b>     | <b>a</b>      | p. 1127    | Thyroid Physiology and Pregnancy                      |
| <b>53-2</b>     | <b>b</b>      | p. 1127    | Autoimmunity and Thyroid Disease                      |
| <b>53-3</b>     | <b>b</b>      | p. 1127    | Hyperthyroidism                                       |
| <b>53-4</b>     | <b>d</b>      | p. 1128    | Treatment                                             |
| <b>53-5</b>     | <b>c</b>      | p. 1127    | Figure 53-2                                           |
| <b>53-6</b>     | <b>b</b>      | p. 1129    | Pregnancy Outcome                                     |
| <b>53-7</b>     | <b>b</b>      | p. 1129    | Fetal and Neonatal Effects, Figure 29-7               |
| <b>53-8</b>     | <b>c</b>      | p. 1130    | Thyroid Storm and Heart Failure: Management           |
| <b>53-9</b>     | <b>c</b>      | p. 1130    | Hyperemesis Gravidarum and Gestational Thyrotoxicosis |
| <b>53-10</b>    | <b>a</b>      | p. 1129    | Figure 53-3                                           |
| <b>53-11</b>    | <b>c</b>      | p. 1130    | Subclinical Hyperthyroidism                           |
| <b>53-12</b>    | <b>c</b>      | p. 1131    | Overt Hypothyroidism and Pregnancy                    |
| <b>53-13</b>    | <b>d</b>      | p. 1131    | Treatment                                             |

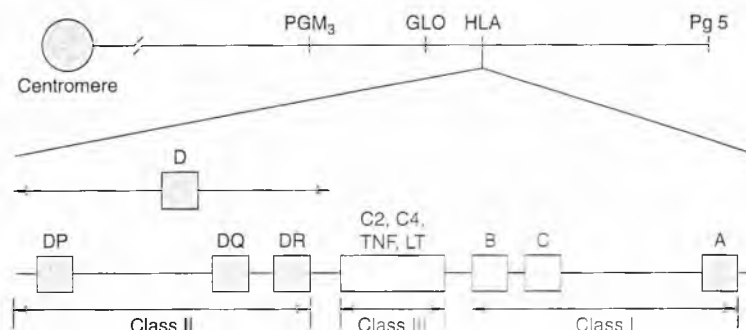
| Question number | Letter answer | Page cited | Header cited                       |
|-----------------|---------------|------------|------------------------------------|
| <b>53-14</b>    | <b>d</b>      | p. 1133    | Thyrotropin Screening in Pregnancy |
| <b>53-15</b>    | <b>d</b>      | p. 1133    | Isolate Maternal Hypothyroxinemia  |
| <b>53-16</b>    | <b>d</b>      | p. 1134    | Postpartum Thyroiditis             |
| <b>53-17</b>    | <b>d</b>      | p. 1135    | Nodular Thyroid Disease            |
| <b>53-18</b>    | <b>b</b>      | p. 1135    | Parathyroid Diseases               |
| <b>53-19</b>    | <b>a</b>      | p. 1135    | Hyperparathyroidism (in Pregnancy) |
| <b>53-20</b>    | <b>b</b>      | p. 1135    | Management in Pregnancy            |
| <b>53-21</b>    | <b>d</b>      | p. 1136    | Pheochromocytoma                   |
| <b>53-22</b>    | <b>b</b>      | p. 1137    | Figure 53-4                        |
| <b>53-23</b>    | <b>c</b>      | p. 1137    | Management                         |
| <b>53-24</b>    | <b>d</b>      | p. 1137    | Cushing Syndrome                   |
| <b>53-25</b>    | <b>c</b>      | p. 1139    | Adrenal Deficiency                 |
| <b>53-26</b>    | <b>d</b>      | p. 1139    | Prolactinomas                      |
| <b>53-27</b>    | <b>b</b>      | p. 1140    | Figure 53-5                        |



## CHAPTER 54

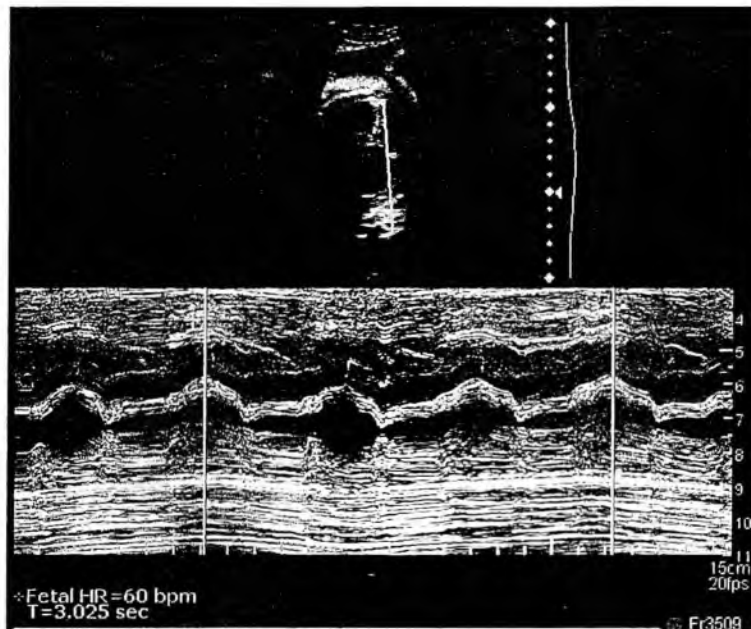
# Connective Tissue Disorders

- 54-1.** All **EXCEPT** which of the following are inherited connective tissue disorders?
- Chondrodysplasia
  - Marfan syndrome
  - Rheumatoid arthritis
  - Osteogenesis imperfecta
- 54-2.** Which statement is true regarding immune-mediated connective tissue disorders?
- They rarely show renal involvement.
  - They have a clearly elucidated pathogenesis.
  - They are always associated with rheumatoid factor.
  - They may or may not have an association with autoantibody formation.
- 54-3.** Which statement is true regarding the *innate phase* of the immune system's protection against nonself?
- It is mediated through cytotoxic mechanisms of cell injury.
  - It involves direct antibody attachment to a specific surface antigen.
  - It is broad and rapid and mediated through neutrophils, macrophages, and complement.
  - It is precise and is mediated by antigen-specific reactions through T and B lymphocytes.
- 54-4.** The series of genes shown here is located on which chromosome?
- The long arm of chromosome 6
  - The short arm of chromosome 6
  - The long arm of chromosome 16
  - The short arm of chromosome 16
- 54-5.** Which statement is true regarding immune-mediated diseases in general during pregnancy?
- They worsen during pregnancy.
  - They improve during pregnancy.
  - They remain unchanged during pregnancy.
  - They are modulated by the effect of pregnancy hormones.
- 54-6.** Fetal cells and DNA are present in maternal blood by what time?
- First trimester
  - Second trimester
  - Third trimester
  - Postpartum period
- 54-7.** The heritable "autoimmunity gene," which predisposes to lupus, rheumatoid arthritis, and Crohn disease, is located on which chromosome?
- 6
  - 16
  - 21
  - 22
- 54-8.** High titers of which systemic lupus erythematosus (SLE)-specific antibody correlate with nephritis and vasculitis activity?
- Anti-Ro
  - Anti-La
  - Antinuclear antibody
  - Anti-double-stranded DNA



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- 54-9.** The presence of which antibody is associated with thrombosis, maternal thrombocytopenia, and fetal loss?
- Anti-Ro
  - Antiplatelet
  - Antiphospholipid
  - Antinuclear antibody
- 54-10.** All **EXCEPT** which of the following are clinical manifestations experienced by 95% of patients with SLE?
- Fever
  - Arthralgias
  - Proteinuria
  - Weight loss
- 54-11.** Which of the following antibodies are specific for lupus?
- Anti-ds-DNA and anti-Ro
  - Anti-ds-DNA and anti-La
  - Anti-Smith and anti-RNP
  - Anti-Smith and anti-ds-DNA
- 54-12.** The fetal complication shown here in this sonographic image is most likely caused by which antibody?
- Anti-Ro
  - Anti-RNP
  - Anti-Smith
  - Anti-ds-DNA
- 54-13.** Low titers of antinuclear antibody (ANA) can imply which of the following?
- Acute viral infection
  - Chronic inflammation
  - An autoimmune disorder other than SLE
  - All of the above
- 54-14.** All **EXCEPT** which of the following laboratory findings may be suggestive of lupus?
- Anemia
  - Leukopenia
  - False-positive rapid plasma reagin (RPR) results
  - Decreased D-dimers
- 54-15.** Based on the 1997 Revised Criteria of the American Rheumatism Association, a patient could be diagnosed with lupus if she had which of the following symptoms?
- Diarrhea, arthritis, anemia, weight loss
  - Discoid rash, renal failure, increased ANA titers
  - Malar rash, anemia, oral ulcers, anti-Sm antibody
  - History of preeclampsia, antiphospholipid antibodies, fetal loss
- 54-16.** In U.S. pregnancies, what is the approximate incidence of lupus?
- 1:600
  - 1:1,200
  - 1:6,000
  - 1:12,000



- 54-17.** Important risk factors that can modify the obstetrical outcome of a patient with lupus include all **EXCEPT** which of the following?
- Patient's age and parity
  - Presence of antinuclear antibodies
  - Presence of antiphospholipid antibodies
  - Disease activity at the beginning of pregnancy
- 54-18.** What is the most common complication seen in obstetrical lupus patients?
- Anemia
  - Preeclampsia
  - Fetal-growth restriction
  - Deep-vein thrombosis
- 54-19.** Which of the following statements is true regarding patients with lupus nephritis during pregnancy?
- There is an increased risk of fetal death.
  - Perinatal mortality rate exceeds 50%.
  - Immunosuppressive treatment should be discontinued during pregnancy.
  - Obstetrical outcomes are usually poor regardless of whether or not their disease remains in remission.
- 54-20.** Which of the following statements is true regarding disease activation in patients with lupus during pregnancy?
- It does not correlate well with complement levels.
  - It correlates best with decreasing levels of C3 complement.
  - It correlates best with decreasing levels of C4 complement.
  - It correlates best with decreasing levels of CH50 complement.
- 54-21.** Which of the following drugs would be a choice of last resort in the treatment of lupus during pregnancy?
- Aspirin
  - Corticosteroids
  - Azathioprine
  - Cyclophosphamide
- 54-22.** Adverse pregnancy outcomes that may be encountered by those born to mothers with lupus during pregnancy include which of the following?
- Increased incidence of learning disorders
  - Congenital heart block
  - Neonatal lupus
  - All of the above
- 54-23.** Which of the following statements is true regarding the cutaneous manifestations of neonatal lupus?
- Are usually transient
  - Have a recurrence risk in subsequent pregnancies of approximately 5%
  - Never develop beyond the first week of life
  - All of the above
- 54-24.** Which of the following contraceptive methods may be appropriate for patients with lupus?
- Progesterone-only pills
  - Combination estrogen-progesterone pills
  - Progesterone-containing intrauterine device
  - All of the above
- 54-25.** Common features of antiphospholipid antibody syndrome (APS) include all **EXCEPT** which of the following?
- Thrombocytosis
  - Central nervous system (CNS) involvement
  - Recurrent arterial or venous thrombosis
  - Fetal loss in the second half of pregnancy
- 54-26.** Anti- $\beta_2$  glycoprotein antibodies have been implicated in which of the following?
- Lupus flares
  - Intervillous-space thrombosis
  - Spiral artery remodeling by trophoblasts
  - All of the above
- 54-27.** Nonspecific antiphospholipid antibodies are present in low titers in what percentage of the normal *nonpregnant* population?
- 1%
  - 5%
  - 10%
  - 15%
- 54-28.** Nonspecific antiphospholipid antibodies are present in low titers in what percentage of the normal *pregnant* population?
- 1%
  - 5%
  - 10%
  - 15%
- 54-29.** Which test is **NOT** considered specific for lupus anti-coagulant?
- Partial thromboplastin time
  - ~~D~~ Dürer Russell viper venom time
  - ~~P~~ Platelet neutralization procedure
  - All of the above are specific

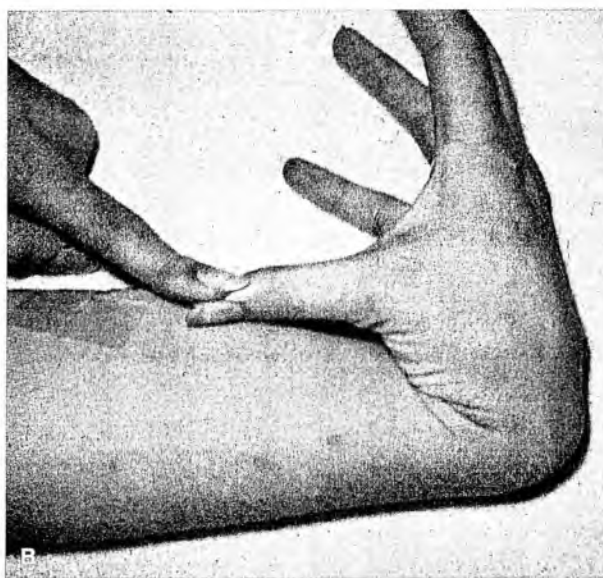
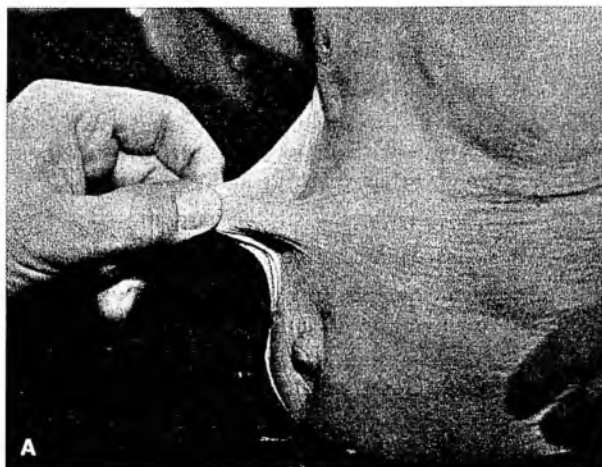
- 54-30.** What is the main mechanism by which antiphospholipid antibodies cause damage?
- Deactivation of the tissue factor pathway
  - Increased protein C and protein S activity
  - Increased decidual production of prostaglandin E<sub>2</sub>
  - Exposure of endothelial and syncytiotrophoblast basement membranes
- 54-31.** The most effective therapy for APS involves which of the following?
- Heparin
  - Glucocorticoids
  - Low-molecular-weight heparin
  - Low-dose aspirin and unfractionated heparin
- 54-32.** Regarding rheumatoid arthritis, all **EXCEPT** which of the following statements are true?
- It is characterized by chronic polyarthritis.
  - It is more common in women than in men.
  - Cigarette smoking increases the risk of rheumatoid arthritis.
  - It is more likely to develop in women who have been pregnant.
- 54-33.** Which of the following criteria is **NOT** necessary to make the diagnosis suggested by this image?



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- Vasculitis
- Symmetrical arthritis
- Morning joint stiffness
- Serum rheumatoid factor

- 54-34.** Treatment of rheumatoid arthritis during pregnancy may involve all **EXCEPT** which of the following?
- Leflunomide
  - Glucocorticoids
  - Tumor necrosis factor- $\alpha$  (TNF- $\alpha$ ) inhibitors
  - Nonsteroidal anti-inflammatory agents
- 54-35.** Patients with the inherited connective tissue disorder exemplified in the following images are typically at risk for which of the following?



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- Aortic dilatation and aneurysm
- Raynaud phenomenon and esophageal stricture
- Sinusitis, pulmonary infiltrates, glomerulonephritis
- Preterm rupture of membranes, great vessel rupture, postpartum hemorrhage

**54-36.** Which disorder is characterized by vasculitis affecting the respiratory tract and kidneys?

- a. Systemic sclerosis
- b. Takayasu arteritis
- c. Ehlers–Danlos syndrome
- d. Wegener granulomatosis

**54-37.** Which disorder is characterized by chronic inflammation of the great vessels?

- a. Systemic sclerosis
- b. Takayasu arteritis
- c. Ehlers–Danlos syndrome
- d. Wegener granulomatosis

## Chapter 54 Answer Key

| Question number | Letter answer | Page cited    | Header cited                                                           |
|-----------------|---------------|---------------|------------------------------------------------------------------------|
| 54-1            | c             | p. 1145       | Introduction                                                           |
| 54-2            | d             | p. 1145       | Immune-Mediated Connective Tissue Diseases                             |
| 54-3            | c             | p. 1145-46    | Immunological Aspects                                                  |
| 54-4            | b             | p. 1146       | Immunological Aspects                                                  |
| 54-5            | d             | p. 1146, 1148 | Immune-Mediated Diseases and Pregnancy, <i>and</i> Lupus and Pregnancy |
| 54-6            | a             | p. 1146       | Fetal Cell Microchimerism                                              |
| 54-7            | b             | p. 1146       | Systemic Lupus Erythematosus                                           |
| 54-8            | d             | p. 1147       | Table 54-1                                                             |
| 54-9            | c             | p. 1147       | Table 54-1                                                             |
| 54-10           | c             | p. 1147       | Table 54-2                                                             |
| 54-11           | d             | p. 1147       | Table 54-1                                                             |
| 54-12           | a             | p. 1147, 1150 | Table 54-1, Congenital Heart Block                                     |
| 54-13           | d             | p. 1147       | Laboratory Findings                                                    |
| 54-14           | d             | p. 1148       | Laboratory Findings                                                    |
| 54-15           | c             | p. 1148       | Table 54-3                                                             |
| 54-16           | b             | p. 1148       | Lupus and Pregnancy                                                    |
| 54-17           | b             | p. 1148       | Lupus and Pregnancy                                                    |
| 54-18           | b             | p. 1149       | Table 54-4                                                             |
| 54-19           | a             | p. 1148-49    | Lupus Nephritis                                                        |
| 54-20           | a             | p. 1149       | Management During Pregnancy                                            |

| Question number | Letter answer | Page cited | Header cited                                     |
|-----------------|---------------|------------|--------------------------------------------------|
| 54-21           | d             | p. 1150    | Pharmacological Treatment                        |
| 54-22           | d             | p. 1150    | Perinatal Mortality and Morbidity                |
| 54-23           | a             | p. 1150    | Neonatal Lupus                                   |
| 54-24           | d             | p. 1151    | Long Term Prognosis and Contraception            |
| 54-25           | a             | p. 1152    | Clinical Features                                |
| 54-26           | b             | p. 1152    | $\beta_2$ -Glycoprotein                          |
| 54-27           | b             | p. 1152-53 | Antiphospholipid Antibodies and Normal Pregnancy |
| 54-28           | b             | p. 1152-53 | Antiphospholipid Antibodies and Normal Pregnancy |
| 54-29           | a             | p. 1153    | Diagnosis of Antiphospholipid Antibody Syndrome  |
| 54-30           | d             | p. 1153    | Mechanism of Action                              |
| 54-31           | d             | p. 1155    | Low Dose Aspirin Plus heparin                    |
| 54-32           | d             | p. 1155    | Rheumatoid Arthritis                             |
| 54-33           | a             | p. 1155    | Table 54-6                                       |
| 54-34           | a             | p. 1156    | Management                                       |
| 54-35           | d             | p. 1159-60 | Ehlers-Danlos Syndrome                           |
| 54-36           | d             | p. 1158    | Wegener's Granulomatosis                         |
| 54-37           | b             | p. 1158    | Takayasu Arteritis                               |

## CHAPTER 55

# Neurological and Psychiatric Disorders

- 55-1.** Which statement regarding imaging the central nervous system is **FALSE**?
- Computed tomography (CT) provides rapid diagnosis.
  - Magnetic resonance imaging is superior to CT for stroke evaluation.
  - Magnetic resonance imaging is associated with low levels of radiation exposure.
  - Fluoroscopy during pregnancy cannot be used because of the high amount of radiation exposure.
- 55-2.** Which of the following is the most common neurological complaint during pregnancy?
- Headache
  - Facial tic
  - Leg numbness
  - Hand weakness
- 55-3.** All **EXCEPT** which of the following medications may be used in the management of migraine headaches during pregnancy?
- Atenolol
  - Meperidine
  - Amitriptyline
  - Ergotamine derivatives
- 55-4.** Seizure disorders complicate what percent of all pregnancies?
- 1/50
  - 1/100
  - 1/200
  - 1/1,000
- 55-5.** Etiologies for increased seizure frequency during pregnancy include all **EXCEPT** which of the following?
- Pregnancy hypervolemia
  - Increased drug absorption
  - Nausea and vomiting of pregnancy
  - Pregnancy-related sleep deprivation
- 55-6.** A woman with a seizure disorder asks about the risk that her child will develop a seizure disorder. What percent is the risk to her offspring?
- 1%
  - 5%
  - 10%
  - 25%
- 55-7.** Most pregnancy-related strokes occur during which period?
- First trimester
  - Second trimester
  - Third trimester
  - Postpartum
- 55-8.** Which of the following is the most common risk factor for pregnancy-related stroke?
- Sepsis
  - Hemorrhage
  - Hypertension
  - Thrombophilia
- 55-9.** All **EXCEPT** which of the following statements regarding cerebral embolism are true?
- Anticoagulation is the primary therapy.
  - The middle cerebral artery is usually involved.
  - It can be associated with a patent foramen ovale.
  - It occurs more commonly during the second half of pregnancy and the early puerperium.
- 55-10.** Which of the following is the most common presenting symptom in patients with cerebral venous thrombosis?
- Seizure
  - Headache
  - Hemiplegia
  - Visual-field deficit
- 55-11.** Subarachnoid hemorrhage is most commonly caused by which of the following?
- Trauma
  - Coagulopathies
  - Saccular "berry" aneurysms
  - Arteriovenous malformations

**55-12.** The cerebral lesion shown here is associated with which of the following?



Reproduced, with permission, from Lichtman MA, Kipps TJ, Seligsohn U, et al: Williams Hematology, 8th ed. New York, McGraw-Hill, 2010, Figure 124-14.

- a. Well-controlled hypertension
- b. Charcot-Bouchard microaneurysm
- c. Difficult epidural catheter placement
- d. Relatively low rates of maternal morbidity

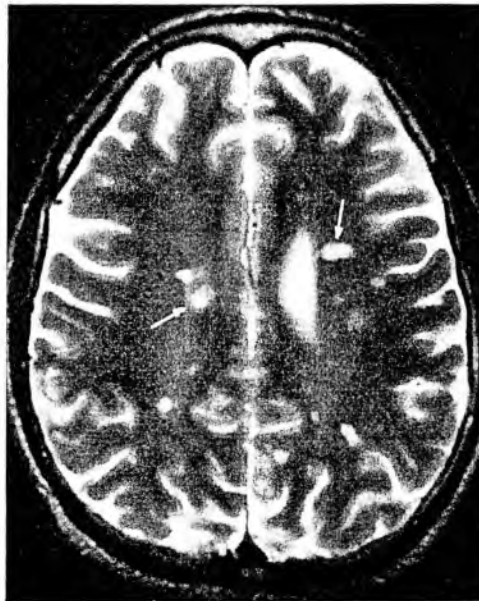
**55-13.** In the general population, what is the estimated rate of the cerebral vascular lesion demonstrated here?



Reproduced, with permission, from Doherty GM: Current Diagnosis & Treatment: Surgery, 13th ed. New York, McGraw-Hill, 2010, Figure 36-6.

- a. 1/50
- b. 1/100
- c. 2/1,000
- d. 1/10,000

**55-14.** All EXCEPT which of the following statements are true about the disease with the multiple white matter plaques shown here?



Reproduced, with permission, from Chen MYM, Pope JrsTL, Ott DJ: Basic Radiology. New York, McGraw-Hill, 2004, Figure 12-36.

- a. Men are affected less frequently than women.
- b. It commonly presents in the third and fourth decades of life.
- c. The incidence in offspring is twice that of the general population.
- d. It is second to trauma as a cause of neurological disability in middle adulthood.

**55-15.** Which clinical type of multiple sclerosis is described by patients who have episodes of neurological dysfunction with interludes of normal recovery and have no persistent deficits?

- a. Relapsing-remitting
- b. Primary progressive
- c. Progressive-relapsing
- d. Secondary progressive

**55-16.** Acute exacerbations of multiple sclerosis during pregnancy can be treated with which of the following therapies?

- a. Interferon  $\beta$
- b. High-dose corticosteroids
- c. Intravenous immunoglobulin G
- d. All of the above



- 55-17. Which of the following medications should be avoided during labor and delivery in a woman with a diagnosis of myasthenia gravis?
- Gentamicin
  - Succinylcholine
  - Magnesium sulfate
  - All of the above

- 55-18. All EXCEPT which of the following statements are accurate regarding this condition?

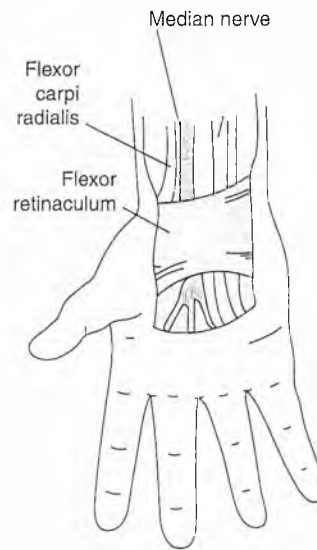


This article was published in Bing's Local Diagnosis in Neurological Diseases, 15th ed. Haymaker W. © Elsevier 1969.

- Maximum weakness is seen 48 hours after presentation.
  - It is associated with an increased risk of gestational hypertension.
  - Treatment with prednisone and acyclovir provides best outcomes.
  - Pregnant women are affected 2–4 times more frequently than nonpregnant women.
- 55-19. What percent of women experience major or minor depression during the postpartum period?
- <1%
  - 2–3%
  - 10–20%
  - 30%
- 55-20. Management of pregnancy in women with benign intracranial hypertension includes which of the following?
- Serial visual-field testing
  - Mandatory cesarean delivery
  - Avoidance of epidural anesthesia
  - Prompt pregnancy termination or delivery
- 55-21. What is the most common cause of late maternal death (43 to 365 days postpartum) in the United Kingdom and Australia?
- Psychiatric illness
  - Motor vehicle accidents
  - Hypertensive complications
  - Thrombotic and embolic events
- 55-22. What is the relapse rate in women with preexisting depressive illness who discontinue therapy during pregnancy?
- 25%
  - 50%
  - 70%
  - 90%
- 55-23. Treatment of postpartum blues primarily involves which of the following?
- Reassurance
  - Psychological consultation
  - Selective serotonin-reuptake inhibitors
  - Child protective service referral
- 55-24. Recurrence rates of depression after recovery from an initial episode of postpartum depression approximate which of the following?
- 2–20%
  - 30–50%
  - 50–85%
  - 80–95%
- 55-25. What is commonly considered the primary treatment for postpartum depression?
- Tricyclic antidepressants
  - Electroconvulsant therapy
  - Monoamine oxidase inhibitors
  - Selective serotonin-reuptake inhibitors

**55-26.** Compression on the median nerve may be treated by which of the following therapies during pregnancy?

- a. Surgery
- b. Splint use at night
- c. Corticosteroid injections
- d. All of the above



Reproduced, with permission, from LeBlond RF, Brown DD, DeGowin DL: The Neurologic Examination. In DeGowin's Diagnostic Examination, 9th ed. New York, McGraw-Hill, 2009.

**Chapter 55 Answer Key**

| Question number | Letter answer | Page cited | Header cited                   |
|-----------------|---------------|------------|--------------------------------|
| <b>55-1</b>     | <b>d</b>      | p. 1164    | Central Nervous System Imaging |
| <b>55-2</b>     | <b>a</b>      | p. 1164    | Headache                       |
| <b>55-3</b>     | <b>d</b>      | p. 1165    | Management                     |
| <b>55-4</b>     | <b>c</b>      | p. 1166    | Seizure Disorders              |
| <b>55-5</b>     | <b>b</b>      | p. 1166    | Epilepsy During Pregnancy      |
| <b>55-6</b>     | <b>c</b>      | p. 1167    | Pregnancy Complications        |
| <b>55-7</b>     | <b>d</b>      | p. 1168    | Risk Factors                   |
| <b>55-8</b>     | <b>c</b>      | p. 1167    | Risk Factors                   |
| <b>55-9</b>     | <b>a</b>      | p. 1169    | Cerebral Embolism              |
| <b>55-10</b>    | <b>b</b>      | p. 1169    | Cerebral Venous Thrombosis     |
| <b>55-11</b>    | <b>c</b>      | p. 1169    | Subarachnoid Hemorrhage        |
| <b>55-12</b>    | <b>b</b>      | p. 1169    | Intracerebral Hemorrhage       |
| <b>55-13</b>    | <b>a</b>      | p. 1170    | Intracerebral Aneurysm         |

| Question number | Letter answer | Page cited | Header cited          |
|-----------------|---------------|------------|-----------------------|
| <b>55-14</b>    | <b>c</b>      | p. 1171    | Multiple Sclerosis    |
| <b>55-15</b>    | <b>a</b>      | p. 1171    | Multiple Sclerosis    |
| <b>55-16</b>    | <b>d</b>      | p. 1171    | Management            |
| <b>55-17</b>    | <b>d</b>      | p. 1173    | Labor and Delivery    |
| <b>55-18</b>    | <b>c</b>      | p. 1173    | Bell Palsy            |
| <b>55-19</b>    | <b>c</b>      | p. 1177    | Pregnancy             |
| <b>55-20</b>    | <b>a</b>      | p. 1175    | Effects of Pregnancy  |
| <b>55-21</b>    | <b>a</b>      | p. 1175    | Psychiatric Disorders |
| <b>55-22</b>    | <b>c</b>      | p. 1178    | Pregnancy             |
| <b>55-23</b>    | <b>a</b>      | p. 1176    | Maternity Blues       |
| <b>55-24</b>    | <b>c</b>      | p. 1178    | Treatment             |
| <b>55-25</b>    | <b>d</b>      | p. 1178    | Treatment             |
| <b>55-26</b>    | <b>d</b>      | p. 1174    | Pregnancy             |

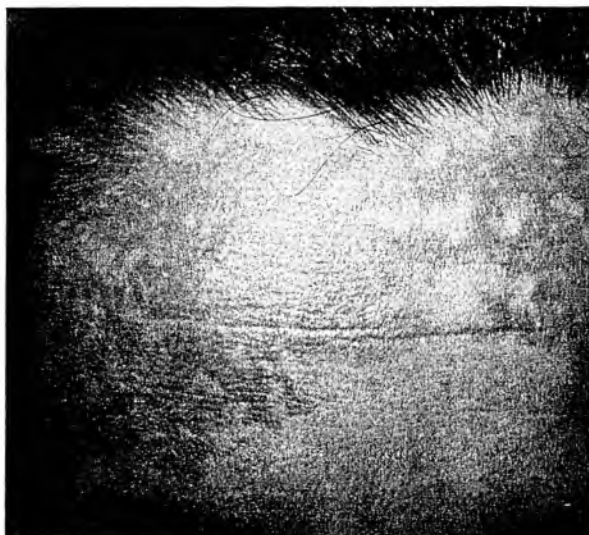
## CHAPTER 56

# Dermatological Disorders

**56-1.** Which of the following defines melasma?

- a. Pigmentation of the face
- b. Pigmentation of the linea alba
- c. Hyperpigmentation of the perineum
- d. Hyperpigmentation of the axillae

**56-2.** Which of the following does **NOT** aggravate the condition shown in this image?



Reproduced, with permission, from Wolff K, Goldsmith LA, Katz SI, et al: Fitzpatrick's Dermatology in General Medicine, 7th ed. New York, McGraw-Hill, 2008, Figure 73-19.

- a. Pregnancy
- b. Vitamin E
- c. Oral contraceptives
- d. Sun exposure

**56-3.** A 19-year-old G1P0 at 36 weeks' gestation presents for her routine prenatal appointment. She complains to you about the melasma that she has developed during the pregnancy. She asks you if and when it will go away. Which of the following is the most appropriate counseling?

- a. It does not go away, but it can be disguised with cosmetics.
- b. It usually regresses postpartum, but it may persist.
- c. It always clears within 12 weeks postpartum.
- d. It does not usually regress, but it can be treated with topical hydroxyquinone.

**56-4.** Which of the following is **NOT** a pregnancy-induced skin change?

- a. Gingivitis
- b. Palmar erythema
- c. Softening of finger and toe nails
- d. Postpartum hirsutism and hair thickening

**56-5.** A 36-year-old Caucasian G3P2 at 30 weeks' gestation presents for her routine prenatal appointment. She complains that she has a mole that has enlarged and darkened. Which of the following is the most appropriate counseling?

- a. Nevi enlarge in pregnancy, and she should not be concerned.
- b. Nevi normally get smaller during pregnancy.
- c. Nevi should not change dramatically in pregnancy, and you recommend a dermatology consultation for removal.
- d. The lesion is not bleeding, and further evaluation is not required.

**56-6.** The hair growth phase is which of the following?

- a. Telogen
- b. Anagen
- c. Progen
- d. Filogen

**56-7.** The resting hair phase is which of the following?

- a. Telogen
- b. Anagen
- c. Progen
- d. Filogen

**56-8.** Which of the following describes estrogen's effect on hair growth in pregnancy?

- a. It prolongs telogen phase.
- b. It enlarges hair follicles.
- c. Estrogen is unrelated to changes in hair growth during pregnancy.
- d. It prolongs the anagen phase.

- 56-9. Physiologic hair loss postpartum is termed which of the following?
- Anagen effluvium
  - Anagen profusum
  - Telogen profusum
  - Telogen effluvium

- 56-10. A 35-year-old G1P0 presents for her routine prenatal appointment. She has noticed increased facial hair growth. Which of the following statements is **NOT** true?
- Women who are predisposed genetically to coarse hair are more severely affected.
  - This is common in pregnancy because of increased hormone levels.
  - These changes will take years to regress, and electrolysis should be considered.
  - Other evidence of masculinization should prompt evaluation for additional sources of androgen.

- 56-11. A 30-year-old G2P1 complains of a "bump" on her head that has grown over the past several weeks and occasionally bleeds. An image of the lesion is provided below. The patient denies any recent injuries, rashes, or fever. A similar lesion developed during her first pregnancy, and resolved on its own. Which of the following is the most likely diagnosis?



- Pyogenic granuloma
- Common wart
- Pyogenic hemangioma
- Melanoma

- 56-12. Which of the following is the most appropriate treatment for the patient in Question 56-11?
- Wide local excision with nodal biopsy
  - 3% acetic acid applied twice weekly until the lesion resolves
  - Laser ablation
  - Treatment typically not required

- 56-13. A 30-year-old G2P2 presents 1 week postpartum with a "bump" on her thumb, which is illustrated here. She is concerned about passing an infection to her newborn. Which of the following is the most appropriate counseling?



- It can be removed, but recurrences are common.
- It is contagious and should be covered with a dressing.
- She will require 14 days of oral broad-spectrum antibiotics.
- It is associated with nerve damage.

- 56-14. A 25-year-old G1P0 at 35 weeks' gestation presents to your office complaining of intense pruritus for 1 week. The patient has no lesions, but impressive excoriations are noted over a large portion of her body. She denies rash, fever, or sick contacts. Which of the following is the most likely diagnosis?

- Pruritic urticarial papules and plaques of pregnancy (PUPPP)
- Pruritus gravidarum
- Pruritic folliculitis of pregnancy
- Herpes gestationis

- 56-15. Which of the following is the most appropriate treatment for the patient in Question 56-14?
- Antipruritics, cholestyramine, ursodeoxycholic acid
  - Antipruritics, oral and topical corticosteroids
  - Antipruritics and oral antibiotic that covers skin flora
  - Antipruritics, acyclovir, topical corticosteroids

- 56-16.** A 22-year-old G1P0 at 36 weeks' gestation with a twin pregnancy complains of intense pruritus. As seen in this image, the patient has erythematous papules that are concentrated on the abdomen and thighs. The patient denies fever or sick contacts. Which of the following is the most likely diagnosis?



- a. PUPPP
  - b. Pruritus gravidarum
  - c. Pruritic folliculitis of pregnancy
  - d. Herpes gestationis
- 56-17.** Which of the following is the most appropriate treatment for the patient in Question 56-16?
- a. Antipruritics, cholestyramine, ursodeoxycholic acid
  - b. Antipruritics, skin emollients, topical corticosteroids
  - c. Antipruritics, oral antibiotic that covers skin flora
  - d. Antipruritics, acyclovir, topical corticosteroids
- 56-18.** Which of the following statements about PUPPP is NOT true?
- a. It seldom recurs in subsequent pregnancies.
  - b. Up to 15% of cases begin postpartum.
  - c. It is more common with a female fetus.
  - d. There is no evidence that perinatal morbidity is increased with PUPPP.
- 56-19.** Which of the following statements about herpes gestationis is true?
- a. It is a common noninfectious skin disorder.
  - b. It commonly begins in the first trimester.
  - c. It does not recur.
  - d. More than half of infected women have HLA-DR3 and HLA-DR4 antigens.
- 56-20.** Which of the following has been used in the treatment of herpes gestationis?
- a. Oral prednisone
  - b. Cyclosporine
  - c. High-dose intravenous immunoglobulin therapy
  - d. All of the above
- 56-21.** In regard to the effect of herpes gestationis on pregnancy, which of the following statements is NOT true?
- a. It has been associated with fetal-growth restriction and stillbirth.
  - b. Antepartum surveillance is recommended.
  - c. Preterm birth and low birthweight are less likely if disease onset is in the first or second trimester.
  - d. Up to 10% of neonates develop lesions similar to those of their mother, but these clear within several weeks.
- 56-22.** An 18-year-old G1P0 at 28 weeks' gestation presents for prenatal care. She has severe acne for which she sees a dermatologist. The dermatologist has resisted treating her because of the pregnancy. The patient would like to know what medications she can take for acne while pregnant. Which of the following treatments is safe during pregnancy?
- a. Isotretinoin
  - b. Etretinate
  - c. Topical benzoyl peroxide
  - d. Tretinoin

- 56-23. Which of the following statements is true regarding the disease demonstrated in this image?



Reproduced, with permission, from Wolff K, Goldsmith LA, Katz SI, et al: Fitzpatrick's Dermatology in General Medicine, 7th ed. New York, McGraw-Hill, 2008, Figure 18-7C.

- a. During pregnancy, it improves in 40% of women and is unchanged in 40%.
  - b. The topical corticosteroids are contraindicated in pregnancy.
  - c. Mycophenolate mofetil is first-line therapy in pregnancy.
  - d. Patients with this disease are not at increased risk for recurrent miscarriage or cesarean delivery.
- 56-24. As shown in this image of the inferior aspect of the breast, which of the following is a chronic, progressive, inflammatory, and suppurative skin disorder characterized by apocrine gland plugging and secondary bacterial infections that may lead to abscess?



- a. Pemphigus
- b. Hidradenitis suppurativa
- c. Erythema nodosum
- d. None of the above

- 56-25. As shown in this image, which of the following is a cutaneous reaction associated with a number of disorders including sarcoidosis and inflammatory bowel disease?



- a. Pemphigus
  - b. Hidradenitis suppurativa
  - c. Erythema nodosum
  - d. Psoriasis
- 56-26. Which of following diseases does not improve, in terms of symptoms, during pregnancy?
- a. Neurofibromatosis
  - b. Psoriasis
  - c. Acne
  - d. Hidradenitis suppurativa

**Chapter 56 Answer Key**

| Question number | Letter answer | Page cited | Header cited     | Question number | Letter answer | Page cited | Header cited                                         |
|-----------------|---------------|------------|------------------|-----------------|---------------|------------|------------------------------------------------------|
| 56-1            | a             | p. 1185    | Pigmentation     | 56-15           | a             | p. 1188    | Table 56-2                                           |
| 56-2            | b             | p. 1185    | Pigmentation     | 56-16           | a             | p. 1189    | Pruritic Urticarial Papules and Plaques of Pregnancy |
| 56-3            | b             | p. 1185    | Pigmentation     | 56-17           | b             | p. 1189    | Pruritic Urticarial Papules and Plaques of Pregnancy |
| 56-4            | d             | p. 1186    | Table 56-1       | 56-18           | c             | p. 1189    | Pruritic Urticarial Papules and Plaques of Pregnancy |
| 56-5            | c             | p. 1186    | Nevi             | 56-19           | d             | p. 1190    | Herpes Gestationis                                   |
| 56-6            | b             | p. 1187    | Hair             | 56-20           | d             | p. 1190    | Herpes Gestationis                                   |
| 56-7            | a             | p. 1187    | Hair             | 56-21           | c             | p. 1191    | Herpes Gestationis                                   |
| 56-8            | d             | p. 1187    | Hair             | 56-22           | c             | p. 1191    | Preexisting Skin Disease                             |
| 56-9            | d             | p. 1187    | Hair             | 56-23           | a             | p. 1191    | Preexisting Skin Disease                             |
| 56-10           | c             | p. 1187    | Hair             | 56-24           | b             | p. 1191    | Preexisting Skin Disease                             |
| 56-11           | a             | p. 1187    | Vascular Changes | 56-25           | c             | p. 1191    | Preexisting Skin Disease                             |
| 56-12           | d             | p. 1187    | Vascular Changes | 56-26           | a             | p. 1191    | Preexisting Skin Disease                             |
| 56-13           | a             | p. 1187    | Vascular Changes |                 |               |            |                                                      |
| 56-14           | b             | p. 1188    | Table 56-2       |                 |               |            |                                                      |



## CHAPTER 57

# Neoplastic Diseases

**57-1.** The incidence of *any* cancer in pregnancy approximates which of the following?

- a. 1:1,000
- b. 1:2,000
- c. 1:5,000
- d. 1:7,000

**57-2.** Among treatment modalities available to physicians caring for pregnant patients with cancer, which of the following is generally safe to use in any trimester?

- a. Chemotherapy
- b. Immunotherapy
- c. Therapeutic radiation
- d. Surgery for diagnosis, staging, and treatment

**57-3.** Regarding cancer survivors, all **EXCEPT** which of the following statements are true?

- a. They may experience decreased fertility.
- b. They are at risk of developing chronic health conditions.
- c. They are at increased risk of having a premature delivery.
- d. They are at increased risk of delivering a child with congenital malformations.

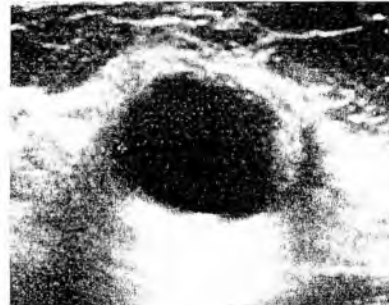
**57-4.** Which of the following is true of women who carry the BRCA1 or BRCA2 cancer gene mutations?

- a. They have increased risk of cancer if they breast-feed.
- b. They have increased risk of cancer if they have had an abortion.
- c. They have increased risk of cancer if they are parous and older than 40.
- d. They have increased risk of developing cancer during pregnancy.

**57-5.** When diagnosed during pregnancy, which is usually true of breast cancer?

- a. It is more advanced.
- b. It is in earlier stages.
- c. It is more resistant to chemotherapy.
- d. It is found at stages equivalent to those in nonpregnant women.

**57-6.** Shown here, which is the preferred imaging study in pregnancy for the initial evaluation of a breast mass?



Fibroglandular Ridge

Reproduced, with permission, from Schoorge JO, Schaffer JI, Halvorson LM, et al. (eds): Williams Gynecology. New York, McGraw-Hill, 2008, Figure 12-5A.

- a. Mammography
- b. Breast sonography
- c. Computed tomography
- d. Magnetic resonance imaging

**57-7.** What is the main reason to consider chemotherapy for the treatment of breast cancer during pregnancy?

- a. Fetal risks are minimal.
- b. Survival is improved with its use.
- c. It is less harmful to the fetus than radiation.
- d. All of the above.

**57-8.** Which of the following is the most common malignant lymphoma in women of childbearing age?

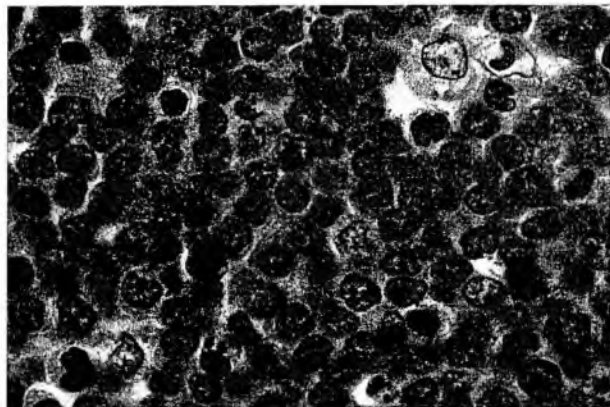
- a. Hodgkin disease
- b. Non-Hodgkin lymphoma
- c. Burkitt lymphoma
- d. T cell lymphoma

**57-9.** Based on the Ann-Arbor staging system, if a patient with Hodgkin disease has lymph node involvement on both sides of the diaphragm, what would her cancer stage be?

- a. I
- b. II
- c. III
- d. IV

- 57-10.** Which of the following is not associated with Hodgkin disease treatment?
- Hyperthyroidism
  - Myocardial damage
  - Survival rates greater than 70%
  - A secondary cancer

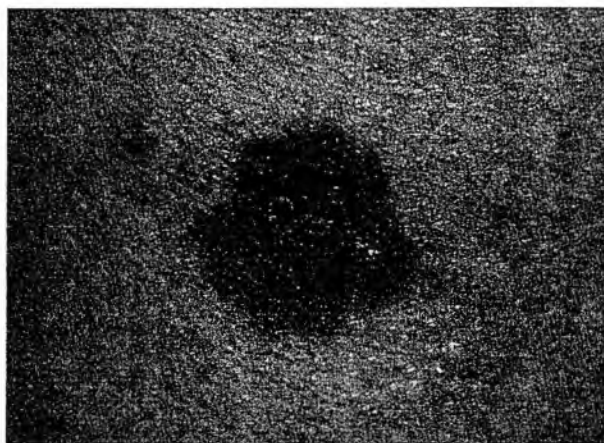
- 57-11.** This aggressive B cell lymphoma is associated with which of the following?



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- Hepatitis B virus infection
  - Hepatitis C virus infection
  - Epstein-Barr virus infection
  - Human immunodeficiency virus (HIV) infection
- 57-12.** If a 24-week pregnant patient with leukemia has a relapse after being on postremission therapy, which of the following interventions will not improve her prognosis?
- Stem cell transplantation
  - Pregnancy termination
  - A second course of chemotherapy
  - Treatment with a different chemotherapeutic agent
- 57-13.** Metastases to placenta and fetus have been documented with which cancer type?
- Leukemia
  - Breast cancer
  - Hodgkin disease
  - Non-Hodgkin lymphoma

- 57-14.** Which is the most common classification system used in the management of this lesion?



Reproduced, with permission, from Knoop KJ, Stack LB, Storrow AB, et al: *Atlas of Emergency Medicine*. 3rd ed. New York, McGraw-Hill, 2010. Photo contributor: Dept. of Dermatology, Wilford Hall USAF Medical Center & Brooke Army Medical Center, San Antonio, Texas.

- World Health Organization (WHO) staging
  - Breslow scale
  - Ann Arbor staging
  - Clark classification
- 57-15.** What is the most important predictor for survival in stage I patients with malignant melanoma?
- Tumor size
  - Tumor thickness
  - Depth of invasion
  - Lymph node involvement
- 57-16.** Which of the following explains why women diagnosed with malignant melanoma during pregnancy have higher mortality rates compared with those of women diagnosed before or after pregnancy?
- Tend to have thicker tumors
  - Treatment delayed until delivery
  - Tend to have lymph node involvement
  - Cannot be treated with chemotherapy during pregnancy
- 57-17.** The most common reproductive tract malignancy diagnosed during pregnancy involves which site?
- Vulva
  - Ovary
  - Cervix
  - Vagina

57-18. Which of the following human papilloma viruses (HPV) is **NOT** a high-risk oncogenic virus?

- a. HPV 16
- b. HPV 18
- c. HPV 31
- d. HPV 36

57-19. Gardasil, the quadrivalent HPV vaccine, protects against which HPV types?

- a. 6, 11, 16, 18
- b. 6, 11, 31, 35
- c. 16, 18, 31, 35
- d. 16, 18, 51, 52

57-20. Cervical conization during pregnancy is associated with all **EXCEPT** which of the following complications?

- a. Preterm labor
- b. Residual neoplasia
- c. Insufficient tissue sampling
- d. Blood loss requiring transfusion

57-21. When encountered in pregnancy, how should a suspicious lesion, like the one shown in this photograph, be managed?



- a. It should be biopsied immediately.
- b. It should be referred for colposcopy.
- c. It should be biopsied 6 weeks postpartum.
- d. It should be biopsied only in the second and third trimester.

57-22. Cervical intraepithelial neoplasia (CIN) in pregnancy

- a. May regress postpartum
- b. May be managed expectantly
- c. Should be treated in pregnancy if invasion is suspected
- d. All of the above

57-23. Which of the following is accurate regarding microinvasive cervical carcinoma during pregnancy?

- a. Pregnancy continuation is safe.
- b. Vaginal delivery is contraindicated.
- c. Definitive treatment should not be delayed.
- d. Survival rate is lower than in nonpregnant patients.

57-24. Invasive cervical cancer in pregnancy is associated with which of the following?

- a. Better cure rates with surgery than with radiation
- b. Decreased survival compared with nonpregnant patients
- c. Underestimation of clinical stage
- d. All of the above

57-25. Standard treatment for endometrial cancer involves which of the following?

- a. Dilatation & curettage (D&C)
- b. Total abdominal hysterectomy with bilateral salpingo-oophorectomy (TAH, BSO)
- c. D&C plus progesterone
- d. Radical hysterectomy with BSO

57-26. Which of the following is the most common type of ovarian cancer diagnosed in pregnancy?

- a. Germ cell
- b. Epithelial
- c. Endodermal sinus
- d. Krukenberg tumor

57-27. A finding of ovarian cancer in pregnancy should prompt which of the following?

- a. Tumor staging
- b. Measurement of CA125 levels
- c. Delay of chemotherapy until delivery
- d. All of the above

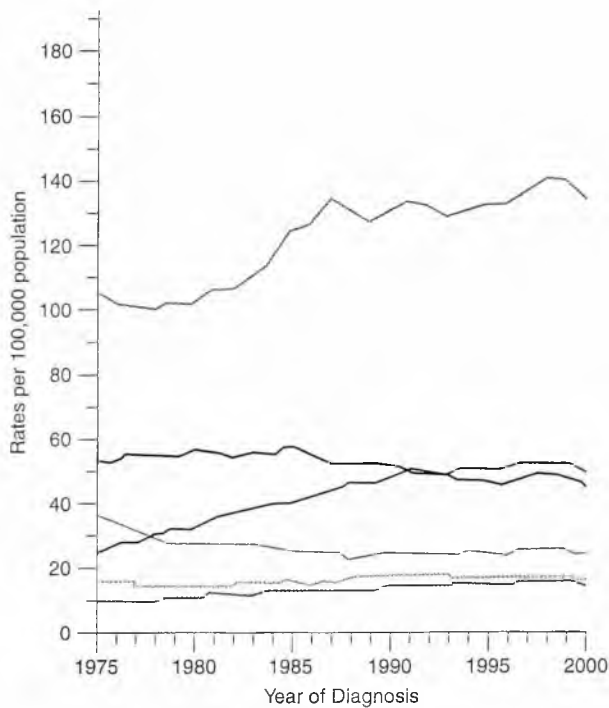
57-28. More than 80% of colorectal cancer cases found in pregnancy arise from which portion of the colon?

- a. Rectum
- b. Sigmoid colon
- c. Transverse colon
- d. Descending colon

**57-29.** Which of the following is the most common presenting finding in renal cell cancer?

- a. Pain
- b. Hematuria
- c. Palpable abdominal mass
- d. Recurrent urinary tract infection

**57-30.** The graph shows the incidences of various cancers in women. Which cancer has the highest incidence in pregnancy?



Reproduced, with permission, from Jemal A, Tiwari RC, Murray T, et al: Cancer Statistics. CA Cancer J Clin 2004;54:8-29.

- a. Breast cancer
- b. Cervical cancer
- c. Malignant melanoma
- d. Colorectal cancer

**Chapter 57 Answer Key**

| Question number | Letter answer | Page cited | Header cited                                  | Question number | Letter answer | Page cited | Header cited                                   |
|-----------------|---------------|------------|-----------------------------------------------|-----------------|---------------|------------|------------------------------------------------|
| <b>57-1</b>     | <b>a</b>      | p. 1194    | Table 57-1                                    | <b>57-17</b>    | <b>c</b>      | p. 1201    | Table 57-3                                     |
| <b>57-2</b>     | <b>d</b>      | p. 1193    | Principles of Cancer Therapy During Pregnancy | <b>57-18</b>    | <b>d</b>      | p. 1201    | Cervical Neoplasia                             |
| <b>57-3</b>     | <b>d</b>      | p. 1195    | Pregnancy in Cancer Survivors                 | <b>57-19</b>    | <b>a</b>      | p. 1201    | Reproductive Tract Neoplasia                   |
| <b>57-4</b>     | <b>d</b>      | p. 1195    | Breast Carcinoma                              | <b>57-20</b>    | <b>c</b>      | p. 1201    | Colposcopy and Biopsy                          |
| <b>57-5</b>     | <b>a</b>      | p. 1195    | Pregnancy and Breast Cancer                   | <b>57-21</b>    | <b>a</b>      | p. 1201    | Abnormal Cytological Results/Colposcopy and bx |
| <b>57-6</b>     | <b>b</b>      | p. 1196    | Breast Carcinoma/Diagnosis                    | <b>57-22</b>    | <b>d</b>      | p. 1202    | Cervical Intraepithelial Neoplasia             |
| <b>57-7</b>     | <b>b</b>      | p. 1197    | Breast Carcinoma/Treatment                    | <b>57-23</b>    | <b>a</b>      | p. 1202    | Cervical Intraepithelial Neoplasia             |
| <b>57-8</b>     | <b>a</b>      | p. 1197    | Hodgkin Disease                               | <b>57-24</b>    | <b>c</b>      | p. 1202    | Invasive Cervical Cancer                       |
| <b>57-9</b>     | <b>c</b>      | p. 1198    | Table 57-3                                    | <b>57-25</b>    | <b>b</b>      | p. 1204    | Endometrial Carcinoma                          |
| <b>57-10</b>    | <b>a</b>      | p. 1198    | Long Term Prognosis                           | <b>57-26</b>    | <b>b</b>      | p. 1204    | Ovarian Cancer/Prognosis                       |
| <b>57-11</b>    | <b>c</b>      | p. 1199    | Non-Hodgkin Lymphoma                          | <b>57-27</b>    | <b>a</b>      | p. 1204    | Ovarian Cancer/Management                      |
| <b>57-12</b>    | <b>b</b>      | p. 1199    | Pregnancy and Leukemia                        | <b>57-28</b>    | <b>a</b>      | p. 1205    | Colorectal Carcinoma                           |
| <b>57-13</b>    | <b>d</b>      | p. 1199    | Non-Hodgkin Lymphoma                          | <b>57-29</b>    | <b>c</b>      | p. 1205    | Renal Neoplasms                                |
| <b>57-14</b>    | <b>d</b>      | p. 1200    | Staging of Melanomas                          | <b>57-30</b>    | <b>a</b>      | p. 1194    | Table 57-1                                     |
| <b>57-15</b>    | <b>a</b>      | p. 1200    | Staging of Melanomas                          |                 |               |            |                                                |
| <b>57-16</b>    | <b>a</b>      | p. 1200    | Pregnancy and Melanoma                        |                 |               |            |                                                |

## CHAPTER 58

# Infectious Diseases

- 58-1.** Which of the following is the fetal response to infection?
- IgG
  - IgA
  - IgM
  - IgE
- 58-2.** The protective effects of breast feeding against infection begin to decline after what time?
- 2 weeks
  - 2 months
  - 4 weeks
  - 4 months
- 58-3.** A 27-year-old G2P1 at 23 weeks' gestation reports that her 6-year-old child has been diagnosed with chicken pox. She does not believe that she has ever had varicella and has been caring for her sick child for 1 week. Which of the following is appropriate counseling?
- She should consider termination because of the high risk for congenital varicella at this gestational age.
  - She only has a 10–20% chance of becoming infected if she is nonimmune.
  - Congenital infection after 20 weeks is uncommon, but she should monitor herself for symptoms and avoid situations that could infect others.
  - If she develops varicella, the chance of pneumonia is 20% and one-half of these women die from complications. Therefore, she should come in if a rash develops.

- 58-4.** Which of the following statements about the disease process illustrated in this image is true?



Contributed by Dr. Mary Jane Pearson.

- It is a reactivation of primary varicella infection and is referred to as *shingles*.
  - It occurs more frequently in pregnant women.
  - It is more severe in pregnant women.
  - It frequently causes congenital malformations.
- 58-5.** Features of congenital varicella include which of the following?
- Chorioretinitis
  - Microphthalmia
  - Skin or bone defects
  - All of the above

- 58-6. A 20-year-old G1P0 at 30 weeks' gestation is diagnosed with varicella. She is hospitalized for an inability to tolerate oral hydration. On hospital day 3, the patient develops cough, tachypnea, and pleuritic chest pain. Her chest radiograph is shown here. The patient should be treated with which of the following?



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- a. Acyclovir 10 mg/kg IV every 8 hours
  - b. Incentive spirometry
  - c. Lasix 20 mg IV every 6 hours
  - d. Vancomycin 1 g IV every 12 hours
- 58-7. A 17-year-old G1P0 at 36 weeks' gestation presents for her routine prenatal care appointment. While in the waiting room, a woman who is coughing and scratching sits next to her. She is clearly ill. If the 17-year-old is being exposed to chicken pox, and she denies having had it in the past, what should be done?
- a. Offer her vaccination
  - b. Test her for varicella zoster virus (VZV) serology and give her VariZIG if negative
  - c. Skip VZV serology testing and administer VariZIG
  - d. Test her for VZV serology and, if negative, give vaccine and VariZIG
- 58-8. Which of the following vaccines is recommended to be given during pregnancy?
- a. Varicella
  - b. MMR
  - c. Influenza
  - d. All of the above

- 58-9. Which of the following is the most common single defect of congenital rubella?

- a. Cataracts
- b. Hepatosplenomegaly
- c. Sensorineural deafness
- d. Mental retardation

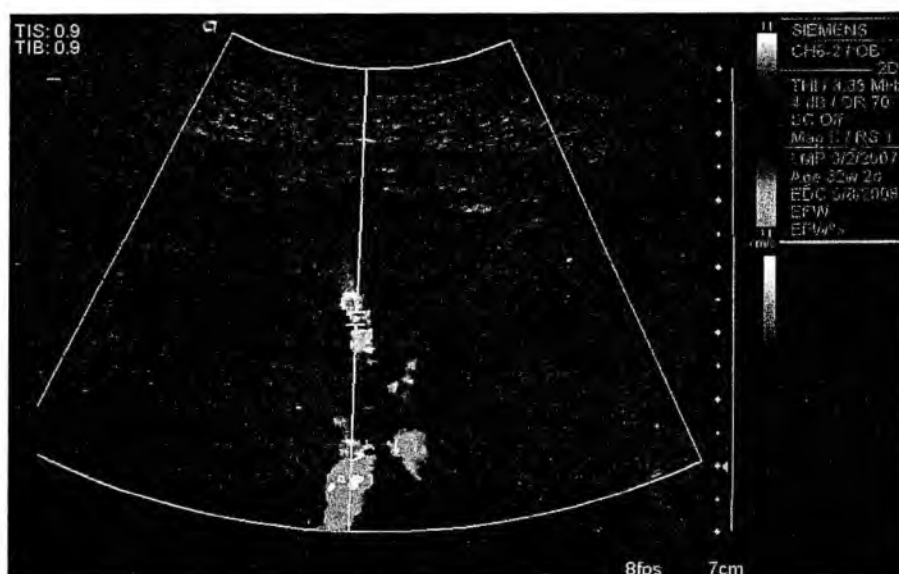
- 58-10. The bright red rash on the child's face in this image is characteristic of infection with which of the following?



Reproduced, with permission, from Cunningham FG, Leveno KL, Bloom SL, et al: Williams Obstetrics, 22nd ed. New York, McGraw-Hill, 2006. <http://www.accessmedicine.com>.

- a. Influenza
  - b. Parvovirus
  - c. Rubella
  - d. Rubeola
- 58-11. A 22-year-old G1P0 at 16 weeks' gestation presents complaining of fever, headache, and arthralgias. The patient works at a daycare center where she has heard employees and parents discussing fifth disease. She is worried she may have this and would like to be tested for it. Which of the following is the most appropriate counseling?
- a. There is a blood test to determine if she is infected.
  - b. Parvovirus is not passed from mother to baby so she does not need to worry.
  - c. It is only critical that she not contract the virus between 36 weeks' gestation and delivery.
  - d. Viral DNA in maternal serum may first be detectable by polymerase chain reaction after a rash develops.

- 58-12.** The patient in Question 58-11 returns to your office in 1 week. Her serological testing is positive for IgG and IgM antibodies to parvovirus. This indicates which of the following?
- She had a prior infection and is now immune.
  - She does not appear to be infected, but she should be retested.
  - She had a recent infection and needs further evaluation.
  - She had a recent infection but has passed the time window when further evaluation would be needed.
- 58-13.** For the patient in Question 58-11, which of the following is the next management step?
- Targeted sonography with middle cerebral artery (MCA) velocimetry every 4 weeks for the remainder of the pregnancy
  - Targeted sonography and MCA velocimetry once a week for 6 weeks after infection
  - Targeted sonography and MCA velocimetry one time, now
  - Targeted sonography and MCA velocimetry every 2 weeks for 10 weeks after infection
- 58-14.** For the patient in Question 58-11, 6 weeks after the patient's infection, sonography shows an MCA peak systolic velocity  $> 1.5$  MoM and a small amount of ascites. Which of the following is the next management step?
- Increase the frequency of MCA velocimetry to twice weekly.
  - Deliver the fetus.
  - Cordocentesis and fetal transfusion if anemic.
  - Recheck maternal IgG and IgM status.
- 58-15.** The below sonographic image of a fetal head shown at the bottom of this page is a Doppler of which vessel?
- Posterior cerebral artery
  - Middle cerebral artery
  - Anterior cerebral artery
  - Superior cerebellar artery
- 58-16.** Which of the following infections has the highest rate of fetal transmission?
- Primary cytomegalovirus (CMV)
  - Parvovirus
  - Third-trimester rubella infection
  - Second-trimester varicella infection
- 58-17.** What test results would you expect in a case of primary CMV infection?
- CMV IgG (+), IgG avidity index high, CMV IgM (+)
  - CMV IgG (+), IgG avidity index high, CMV IgM (–)
  - CMV IgG (–), CMV IgM (–)
  - CMV IgG (+), IgG avidity index low, CMV IgM (+)
- 58-18.** Which of the following is the gold standard for the diagnosis of fetal CMV infection?
- Sonography
  - Amniotic fluid CMV nucleic acid amplification testing
  - Maternal serum IgG avidity testing
  - Cordocentesis and fetal blood viral culture





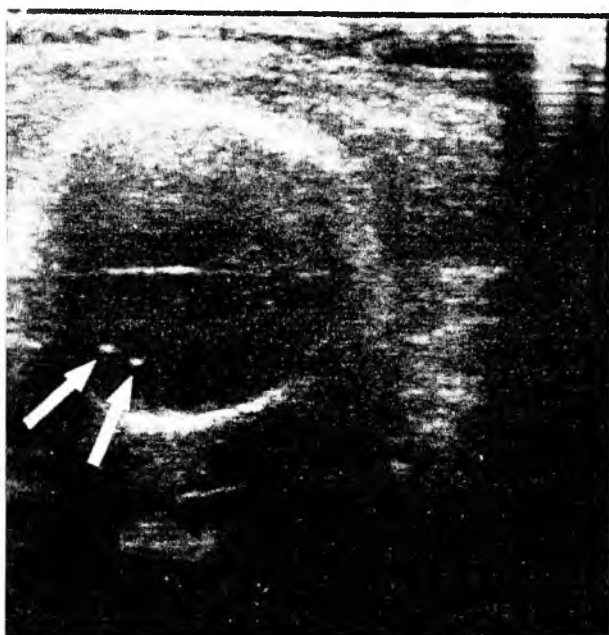
- 58-19.** Which of the following patients requires intrapartum group B streptococcus (GBS) prophylaxis?
- 39 weeks' gestation, not in labor, presenting for an elective cesarean delivery for breech presentation. GBS culture at 35 weeks' gestation was positive.
  - 40 weeks' gestation, active labor, intact membranes, positive GBS screen in a prior pregnancy but negative screen in this pregnancy.
  - 36 weeks' gestation, preterm labor, rupture of membranes for 14 hours, negative GBS screening culture at 35 weeks' gestation.
  - 38 weeks' gestation, active labor, positive urine culture for GBS at 8 weeks' gestation treated with the appropriate antibiotics.
- 58-20.** Which of the following antibiotics is **NOT** recommended for GBS prophylaxis?
- Penicillin
  - Vancomycin
  - Cefazolin
  - Trimethoprim-sulfamethoxazole
- 58-21.** A 26-year-old G5P4 at 20 weeks' gestation presents complaining of a "bump" under her arm that is draining pus. She is afebrile and appears well. This has happened several times before on her legs. One of the lesions from her leg is illustrated here. She assumed those were the result of spider bites. A culture reveals methicillin-resistant *Staphylococcus aureus* (MRSA). You treat her with which of the following?
- 58-22.** Which of the following is associated with listeriosis in pregnancy?
- Koplik spots
  - Placental microabscesses
  - Spider bites
  - Intracranial calcifications
- 58-23.** Which of the following is preferred treatment for uncomplicated salmonella gastroenteritis?
- Azithromycin
  - Ceftriaxone
  - Trimethoprim-sulfamethoxazole
  - Supportive care only
- 58-24.** Which of the following statements is true about fetal rates of toxoplasmosis infection related to fetal age at the time of maternal infection?
- Risk of fetal infection increases with advancing fetal age.
  - Risk of fetal infection decreases with advancing fetal age.
  - Severity of fetal infection is much greater in late pregnancy.
  - Risk and severity of fetal infection are not dependent on gestational age.
- 58-25.** Which of the following is associated with toxoplasmosis infection?
- Preterm birth
  - Macrosomia
  - Hearing loss
  - Placental microabscesses



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- Cephalexin
- Doxycycline
- Amoxicillin
- Trimethoprim-sulfamethoxazole

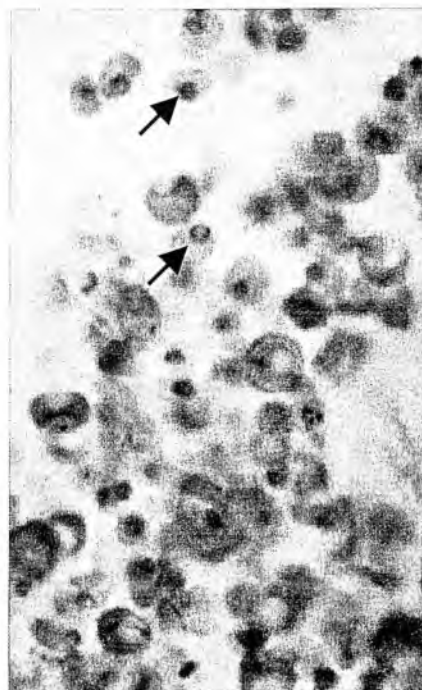
- 58-26.** A differential diagnosis for the findings in this sonographic image would include all **EXCEPT** which of the following?



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- a. CMV
  - b. Rubella
  - c. Toxoplasmosis
  - d. Parvovirus
- 58-27.** Which of the following maternal serum results would indicate acute toxoplasmosis infection?
- a. IgG (–), IgM (–)
  - b. IgG (+), IgM (+), IgG avidity index high
  - c. IgG (+), IgM (–), IgG avidity index high
  - d. IgG (+), IgM (+), IgG avidity index low
- 58-28.** Which of the following is **NOT** a congenital toxoplasmosis prevention strategy?
- a. Avoiding soiled cat litter
  - b. Cooking meat to a safe temperature
  - c. Vaccination against toxoplasmosis
  - d. Thoroughly washing fruits and vegetables

- 58-29.** A 35-year-old G3P2 at 28 weeks' gestation presents to the OB emergency department. She is complaining of fever, chills, and back pain. The patient reports uncomplicated prenatal care in Bangladesh. The patient has a temperature of 100.2°F, but vitals are otherwise normal. You send a urinalysis and complete blood count. The urine shows a few bacteria and epithelial cells. A smear of the patient's red blood cells is shown here. Which of the following is the likely diagnosis?



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- a. Pyelonephritis complicated by hemolysis
  - b. Malaria
  - c. Parvovirus infection
  - d. Meningitis
- 58-30.** For a pregnant woman with chloroquine-resistant malaria, which of the following is currently recommended?
- a. Mefloquine
  - b. Atovaquone
  - c. Quinine and clindamycin
  - d. Doxycycline and primaquine

**Chapter 58 Answer Key**

| Question number | Letter answer | Page cited | Header cited                           | Question number | Letter answer | Page cited | Header cited                          |
|-----------------|---------------|------------|----------------------------------------|-----------------|---------------|------------|---------------------------------------|
| 58-1            | c             | p. 1210    | Fetal and Newborn Immunology           | 58-16           | a             | p. 1218    | CMV Clinical Manifestations           |
| 58-2            | b             | p. 1210    | Fetal and Newborn Immunology           | 58-17           | d             | p. 1219    | Figure 58-4                           |
| 58-3            | c             | p. 1211    | Varicella-Zoster Virus (VZV)           | 58-18           | b             | p. 1219    | CMV Amniotic Fluid Studies            |
| 58-4            | a             | p. 1211    | Varicella-Zoster Virus (VZV)           | 58-19           | d             | p. 1221    | Figure 58-5                           |
| 58-5            | d             | p. 1211    | Fetal and Neonatal Varicella Infection | 58-20           | d             | p. 1223    | Table 58-2                            |
| 58-6            | a             | p. 1212    | Varicella Vaccination                  | 58-21           | d             | p. 1224    | MRSA Management                       |
| 58-7            | b             | p. 1212    | Varicella Infection, Vaccination       | 58-22           | b             | p. 1224    | Listeriosis Clinical Presentation     |
| 58-8            | c             | p. 1213    | Influenza Prevention                   | 58-23           | d             | p. 1225    | Salmonellosis                         |
| 58-9            | c             | p. 1214    | Congenital Rubella Syndrome            | 58-24           | a             | p. 1226    | Toxoplasmosis                         |
| 58-10           | b             | p. 1216    | Parvovirus Diagnosis                   | 58-25           | a             | p. 1226    | Toxoplasmosis                         |
| 58-11           | a             | p. 1216    | Parvovirus Diagnosis                   | 58-26           | d             | p. 1226    | Figure 58-10                          |
| 58-12           | c             | p. 1217    | Figure 58-2                            | 58-27           | d             | p. 1227    | Toxoplasmosis Clinical Manifestations |
| 58-13           | d             | p. 1217    | Figure 58-2                            | 58-28           | c             | p. 1227    | Toxoplasmosis Prevention              |
| 58-14           | c             | p. 1217    | Figure 58-2                            | 58-29           | b             | p. 1228    | Figure 58-11                          |
| 58-15           | b             | p. 1218    | Figure 58-3                            | 58-30           | c             | p. 1228    | Malaria Treatment                     |

## CHAPTER 59

# Sexually Transmitted Diseases

**59-1.** A 24-year-old G3P1 at 22 weeks' gestation presents for her first prenatal care visit. She has a history of drug abuse, but denies use at this time. She denies complaints, but a lesion is noted on the right labia during examination. An image of the lesion is provided here. Which of the following is the likely diagnosis?



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- a. Primary syphilis
  - b. Herpes
  - c. Chancroid
  - d. Bartholin abscess
- 59-2.** Which of the following is the best laboratory test for the condition in Question 59-1?
- a. Darkfield microscopic examination
  - b. Serum assay for herpes simplex virus (HSV) 1 and 2 antibodies
  - c. Human papilloma virus (HPV) testing
  - d. Aerobic bacterial culture

**59-3.** Palm lesions in this image are a manifestation of which of the following?

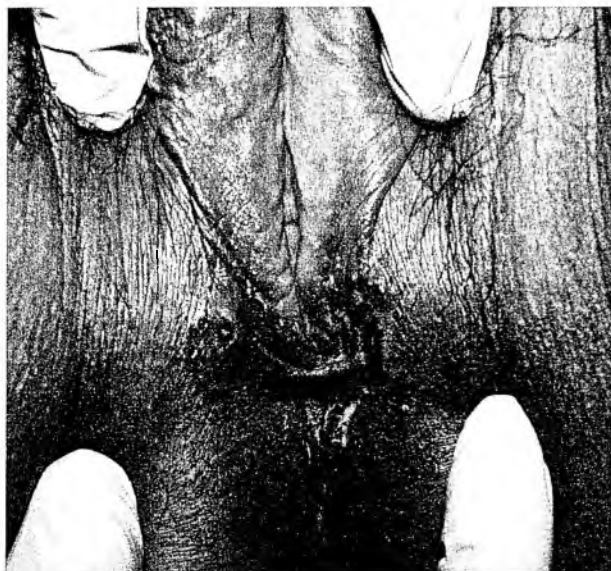


Reproduced, with permission, from Schorge JO, Schaffer JI, Halvorson LM, et al: *Williams Gynecology*. New York, McGraw-Hill, 2008, Figure 3-9.

- a. Primary syphilis
  - b. Secondary syphilis
  - c. Latent syphilis
  - d. Tertiary syphilis
- 59-4.** Findings of secondary syphilis include all **EXCEPT** which of the following?
- a. Moth-eaten alopecia
  - b. Arthralgias
  - c. Condylomata lata
  - d. Oral hairy leukoplakia
- 59-5.** Three to 6 months following treatment of primary or secondary syphilis, serological testing should decrease by what degree?
- a. Twofold
  - b. Fourfold
  - c. Eightfold
  - d. 16-fold

- 59-6. A 19-year-old G4P3 at 23 weeks' gestation presents with a rapid plasma reagin test (RPR) result of 1:8. Confirmatory testing is positive. The patient has no signs or symptoms of syphilis. Two years ago, the patient's RPR was nonreactive. The treatment plan for this patient should be which of the following?
- Benzathine penicillin G, 2.4 million units IM, weekly for three doses
  - Benzathine penicillin G, 2.4 million units IM, weekly for two doses
  - Benzathine penicillin G, 2.4 million units IM once
  - Aqueous procaine penicillin, 4 million units IV every 4 hours for 10 days
- 59-7. A 26-year-old G2P1 at 14 weeks' gestation presents for her second prenatal care visit. On review of her laboratory work, you find her RPR result is 1:2. Which of the following is the next best management step?
- Treat with benzathine penicillin G, 2.4 million units IM once
  - Send serum for HSV 1 and 2 antibody testing
  - Send serum for fluorescent treponemal antibody absorption (FTA-ABS) testing
  - Repeat the RPR in 1 month
- 59-8. You complete *Treponema pallidum* passive particle agglutination (TP-PA) testing on the patient in Question 59-7. The test result is negative. Which of the following explains these results?
- She has primary syphilis.
  - She has secondary syphilis.
  - She has yaws.
  - She has a false-positive RPR.
- 59-9. Which of the following is **NOT** a sonographic fetal finding of congenital syphilis?
- Hepatomegaly
  - Lymphadenopathy
  - Placentomegaly
  - Ascites/hydrops
- 59-10. A pregnant woman with syphilis and a true penicillin allergy should be treated with which of the following?
- Erythromycin
  - Azithromycin
  - Doxycycline after delivery
  - Benzathine penicillin G after desensitization
- 59-11. Risk factors for gonorrhea include all **EXCEPT** which of the following?
- Age <25 years
  - Prostitution
  - Recurrent urinary tract infections
  - Drug use
- 59-12. A patient with a positive test for gonorrhea and no testing for chlamydial infection should be treated with which of the following?
- Ceftriaxone 125 mg IM once and azithromycin 1 g orally once
  - Cefixime 400 mg orally once
  - Erythromycin 500 mg orally four times daily for 7 days
  - Azithromycin 1 g orally once and amoxicillin 500 mg orally three times daily for 7 days
- 59-13. Which of the following is the most commonly identifiable infectious cause of ophthalmia neonatorum?
- Chlamydia trachomatis*
  - Neisseria gonorrhoeae*
  - Haemophilus ducreyi*
  - Trichomonas vaginalis*
- 59-14. A patient who has HSV-2 isolated from a genital lesion but neither HSV-1 nor HSV-2 serum antibodies is categorized as which of the following?
- First episode primary infection
  - First episode nonprimary infection
  - Reactivation disease
  - Nonprimary infection not otherwise specified

- 59-15.** A 20-year-old G3P0 at 16 weeks' gestation complains of painful perineal lesions, which are shown in the image here. She also reports subjective fever at home. Which of the following is the next best management step?



Contributed by Dr. William Griffith.

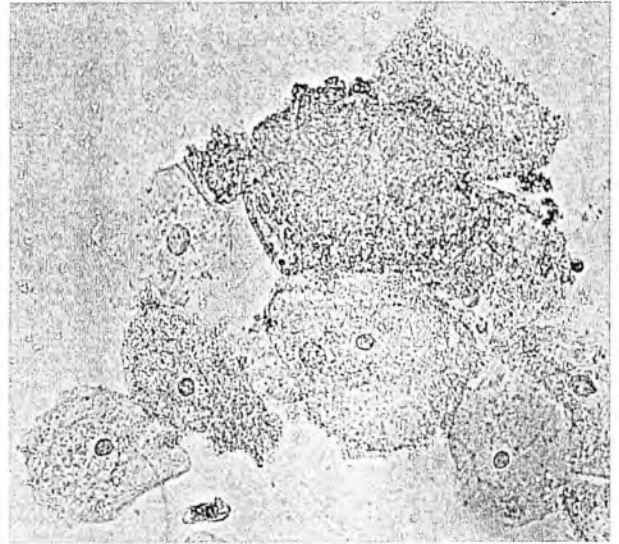
- a. Swab the lesion for polymerase chain reaction (PCR) assay for HSV.
  - b. Swab the lesion for cell culture.
  - c. Send urine for culture.
  - d. Obtain blood for human immunodeficiency virus (HIV) testing.
- 59-16.** Which of the following statements about genital herpes is true?
- a. Most recurrent genital herpes is caused by HSV-1.
  - b. With recurrent outbreaks, lesions are greater in number and more tender.
  - c. Recurrences are most common in the first year after initial infection and then slowly decline in frequency.
  - d. Genital herpes can only be transmitted to a partner when the infected person has a lesion.
- 59-17.** In regard to HSV, which of the following is the purpose of acyclovir suppression?
- a. It decreases the number of outbreaks at term.
  - b. It decreases cesarean delivery rates for outbreaks.
  - c. It decreases asymptomatic shedding.
  - d. All of the above.
- 59-18.** A 25-year-old G3P2 at 39 weeks' gestation presents in active labor. The patient has a history of genital herpes. During inspection of the perineum and cervix, no lesions are seen. However, a suspicious, tender lesion is seen on the patient's inner thigh, 3 cm above the knee. Which of the following is the best management plan?
- a. Cesarean delivery and oral acyclovir
  - b. Tocolysis and oral acyclovir
  - c. Occlusive dressing over the lesion and permit vaginal delivery
  - d. Tocolysis and send swab of lesion for PCR assay for HSV
- 59-19.** A 25-year-old G2P1 at 36 weeks' gestation is known to have genital herpes. She has had two outbreaks during this pregnancy. You should offer her which of the following regimens for suppression?
- a. Acyclovir 400 mg orally three times daily for 5 days starting at 39 weeks
  - b. No acyclovir recommended for only two prior outbreaks
  - c. Valacyclovir 1 g orally daily for 5 days starting at 40 weeks
  - d. Acyclovir 400 mg orally three times daily starting now and continuing until delivery
- 59-20.** A 32-year-old G3P2 is diagnosed with preterm, premature rupture of membranes (PPROM) at 30 weeks' gestation. The patient is afebrile with no evidence of chorioamnionitis. During speculum examination, a lesion is noted in the vagina and is consistent with HSV. The patient denies a history of genital herpes. Which of the following is the best plan of care?
- a. Culture the lesion and conservative management of PPRM with antibiotics and corticosteroids
  - b. Culture the lesion, start acyclovir, give corticosteroids, and perform cesarean delivery after 48 hours
  - c. Perform a cesarean delivery immediately
  - d. Culture the lesion, give antibiotics and acyclovir, but withhold corticosteroids because of the lesion

- 59-21. Treatment during pregnancy for the condition in this image can include all **EXCEPT** which of the following?



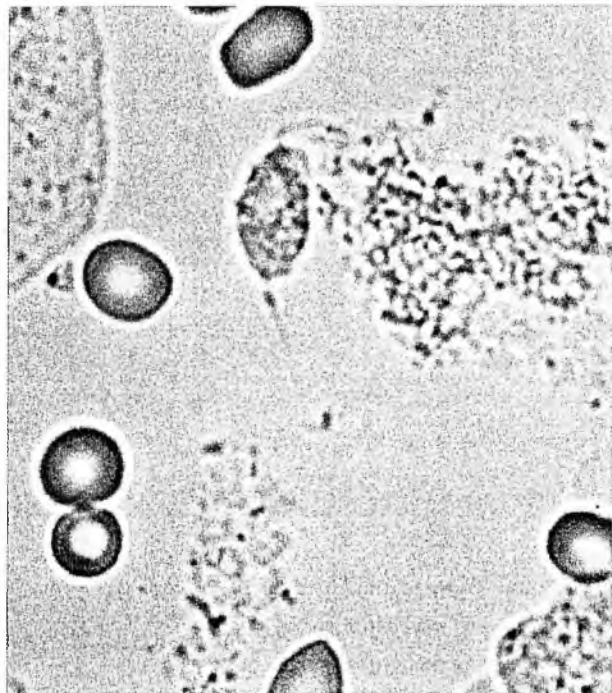
- a. Trichloroacetic acid
- b. Cryotherapy
- c. Laser ablation
- d. Imiquimod

- 59-22. A 20-year-old G1P0 at 18 weeks' gestation complains of malodorous vaginal discharge for 4 days. During speculum examination, you note watery gray discharge that smells fishy. You perform a wet prep, and a photograph of the slide is provided below. Which of the following is the best treatment for this patient?



- a. Metronidazole 500 mg orally twice daily for 7 days
- b. Azithromycin 1 g orally once
- c. Metronidazole 2 g orally once
- d. Azithromycin 1 g orally on day 1 followed by 250 mg orally for 4 additional days

- 59-23.** A 15-year-old G1P0 at 16 weeks' gestation presents for her prenatal visit. She complains of malodorous vaginal discharge for 1 week and vaginal pruritus. During speculum examination, you note foamy leukorrhea. You perform a wet prep, and a photograph of the slide is provided here. Which of the following is the best treatment for this patient?



- a. Metronidazole 500 mg orally twice daily for 7 days
  - b. Azithromycin 1 g orally once
  - c. Metronidazole 2 g orally once
  - d. Azithromycin 500 mg orally on day 1 followed by 250 mg orally for 4 more days
- 59-24.** A pregnant woman's Pap smear identifies trichomonads. She is asymptomatic and 8 weeks' gestation. Which of the following is the next best management step?
- a. Treat her now to prevent preterm birth.
  - b. No treatment is required.
  - c. Treat her in the second trimester to prevent preterm birth.
  - d. Complete a wet prep at her next visit and treat her if trichomoniasis is found.
- 59-25.** Transmission of HIV from a woman to her fetus is most likely to occur at which time?
- a. Before 36 weeks' gestation
  - b. 36 weeks' gestation through labor
  - c. Intrapartum
  - d. Transmission risk is the same throughout gestation
- 59-26.** A 28-year-old G5P4 presents in active labor. She has had no prenatal care, but she appears to be term. A rapid HIV test is performed, and results are positive for HIV. Which of the following is the best management plan for this patient?
- a. Complete HIV counseling, start antiretroviral prophylaxis without delay, and postpone breast feeding until confirmatory test results are available
  - b. Send a confirmatory test and start antiretroviral prophylaxis only if this second confirmatory test result is positive for HIV
  - c. Complete HIV counseling, start antiretroviral prophylaxis, and continue it for 6 months
  - d. Start antiretroviral prophylaxis immediately and complete HIV counseling postpartum to avoid undue anxiety during labor
- 59-27.** Perinatal HIV transmission is most accurately correlated with which of the following?
- a. CD4<sup>+</sup> count
  - b. CD4<sup>+</sup> cell proportion
  - c. Viral load
  - d. Presence of an AIDS-defining illness
- 59-28.** Which of the following medications for HIV should be avoided in pregnancy because of teratogenicity concerns?
- a. Lamivudine
  - b. Efavirenz
  - c. Nelfinavir
  - d. Tenofovir
- 59-29.** A 25-year-old G2P1 at 8 weeks' gestation is known to be HIV-infected. She has been well controlled for 2 years on Combivir and nelfinavir, which she started during her last pregnancy. Her first baby is not infected. The patient is currently experiencing significant nausea and vomiting. Her weight is stable, but she reports emesis five times daily despite antiemetics. Which of the following is a reasonable management plan for this patient?
- a. Stop nelfinavir and restart in the second trimester when nausea and vomiting have resolved
  - b. Stop all antiretroviral medications and restart in the second trimester when nausea and vomiting have resolved
  - c. Continue the patient's current medications
  - d. Stop Combivir and restart in the second trimester when nausea and vomiting have resolved



- 59-30.** A 20-year-old G1P0 at 10 weeks' gestation is diagnosed with HIV infection. She has not previously taken antiretroviral medications. Her viral load is 900 copies/mL and her CD4<sup>+</sup> count is 400 cells/mm<sup>3</sup>. Which of the following is the best management plan?
- Start antiretroviral therapy now
  - Start zidovudine in labor
  - Do not start antiretroviral therapy until viral load exceeds 1,000 copies/mL
  - Start antiretroviral therapy in the second trimester
- 59-31.** A 21-year-old G1P0 at 38 weeks' gestation who is HIV-infected on Combivir and Kaletra presents in active labor at 4 cm dilation. Membranes are intact. The patient's viral load at 36 weeks was 250 copies/mL. Her CD4<sup>+</sup> count is normal. Which of the following is appropriate management of this patient?
- Perform amniotomy and start oxytocin to hasten labor
  - Place a fetal scalp electrode and intrauterine pressure catheter because the viral load is only 250 copies/mL
  - Start IV zidovudine, initiate oxytocin augmentation as needed, and leave membranes intact
  - Proceed with cesarean delivery because the viral load is not undetectable
- 59-32.** An HIV-infected pregnant woman under your care presents for her 36-week prenatal visit. Which of the following discussion points is true?
- All HIV-infected women should have a cesarean delivery.
  - She may have a vaginal delivery only if her viral load is <100 copies/mL.
  - If her viral load is >1,000 copies/mL, you will schedule cesarean delivery for 38 weeks.
  - She can deliver vaginally regardless of viral load because she is on highly active antiretroviral therapy.

# Chapter 59 Answer Key

| Question number | Letter answer | Page cited | Header cited          |
|-----------------|---------------|------------|-----------------------|
| 59-1            | a             | p. 1236    | Syphilis              |
| 59-2            | a             | p. 1236    | Syphilis              |
| 59-3            | b             | p. 1236    | Syphilis              |
| 59-4            | d             | p. 1236    | Syphilis              |
| 59-5            | b             | p. 1237    | Syphilis              |
| 59-6            | a             | p. 1238    | Figure 59-1           |
| 59-7            | c             | p. 1238    | Syphilis              |
| 59-8            | d             | p. 1238    | Syphilis              |
| 59-9            | b             | p. 1238    | Syphilis              |
| 59-10           | d             | p. 1238    | Syphilis              |
| 59-11           | c             | p. 1240    | Gonorrhea             |
| 59-12           | a             | p. 1240    | Gonorrhea             |
| 59-13           | a             | p. 1240    | Chlamydial Infections |
| 59-14           | a             | p. 1242    | Herpes Simplex Virus  |
| 59-15           | b             | p. 1242    | Figure 59-5           |
| 59-16           | c             | p. 1242    | Herpes Simplex Virus  |
| 59-17           | d             | p. 1244    | Herpes Simplex Virus  |

| Question number | Letter answer | Page cited | Header cited                        |
|-----------------|---------------|------------|-------------------------------------|
| 59-18           | c             | p. 1244    | Herpes Simplex Virus                |
| 59-19           | d             | p. 1244    | Herpes Simplex Virus                |
| 59-20           | a             | p. 1245    | Herpes Simplex Virus                |
| 59-21           | d             | p. 1245    | External Genital Warts              |
| 59-22           | a             | p. 1246    | Bacterial Vaginosis                 |
| 59-23           | c             | p. 1246    | Trichomoniasis                      |
| 59-24           | b             | p. 1246    | Trichomoniasis                      |
| 59-25           | b             | p. 1248    | Maternal and Perinatal Transmission |
| 59-26           | a             | p. 1248    | Table 59-6                          |
| 59-27           | c             | p. 1249    | Maternal and Perinatal Transmission |
| 59-28           | b             | p. 1250    | Antiretroviral Therapy              |
| 59-29           | b             | p. 1251    | Table 59-8                          |
| 59-30           | d             | p. 1251    | Table 59-8                          |
| 59-31           | c             | p. 1252    | Prenatal HIV Transmission           |
| 59-32           | c             | p. 1253    | Prenatal HIV Transmission           |